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LONG TERM MONITORING OPTIMIZATION REPORT FOR OPERABLE UNIT 2 (OU 2) NTC ORLANDO FL

11/21/2013

RESOLUTION CONSULTANTS

LONG TERM MONITORING OPTIMIZATION REPORT
OPERABLE UNIT 2 (OU 2)
FORMER NTC ORLANDO, FLORIDA

FINAL

Resolution Consultants Job No.:
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Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Southeast
BRAC Program Management Office, SE
4130 Faber Place Drive
North Charleston, South Carolina 29405

Comprehensive Long-Term Environmental Action Navy
Contract Number N62470-11-D-8013

CTO No. JM22

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November 21, 2013

Final

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List of Acronyms and Abbreviations

µg/L	micrograms per liter
AGVIQ-CH2MHILL	AGVIQ/CH2MHILL Joint Venture II
BFA	Barnes, Ferland and Associates, Inc.
bgs	below ground surface
BGSVs	Background Screening Values
BRAC PMO	Base Realignment and Closure Program Management Office
CERCLA	Comprehensive Environmental Response Compensation Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
CLEAN	Comprehensive Long-Term Environmental Action Navy
COCs	Chemicals of Concern
CSM	Conceptual Site Model
CTO	Contract Task Order
CVOC	chlorinated volatile organic compounds
DON	Department of the Navy
EOS®	emulsified oil substrate
ERA	Ecological Risk Assessment
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FS	Feasibility Study
FSWCTL	Freshwater Surface Water Cleanup Target Level
GOAA	Greater Orlando Aviation Authority
GCTL	Groundwater Cleanup Target Level
HHRA	Human Health Risk Assessment
IRA	Interim Remedial Action
LTM	Long Term Monitoring
LUCs	Land Use Controls
MNA	monitored natural attenuation
NA	Natural Attenuation
NADCs	Natural Attenuation Default Concentrations
NAVFAC SE	Naval Facilities Engineering Command, Southeast
NERP	Navy Environmental Restoration Program
NTC	Naval Training Center
OU	Operable Unit
PAHs	Polynuclear Aromatic Hydrocarbons
PCE	Tetrachloroethene
PRB	permeable reactive barrier
PRGs	preliminary remediation goals

List of Acronyms and Abbreviations (continued)

RAOs	Remedial Action Objectives
RG	Remediation Goal
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SCTLs	Soil Cleanup Target Levels
SOW	Scope of Work
TCE	Trichloroethene
Tetra Tech	Tetra Tech NUS, Inc.
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

1.1 Objective

On behalf of the Navy, Resolution Consultants is submitting this Long Term Monitoring (LTM) Optimization Report to provide recommendations for future monitoring activities at Navy Environmental Restoration Program (NERP) Operable Unit (OU) 2, at the Former Naval Training Center (NTC) Orlando, Florida. The optimization activities were completed for the Naval Facilities Engineering Command, Southeast (NAVFAC SE) and the Base Realignment and Closure Program Management Office (BRAC PMO) under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62470-11-D-8013, Contract Task Order (CTO) JM22. The Scope of Work (SOW) for this CTO is dated 22 May 2012.

LTM Optimization was performed in accordance with Department of the Navy (DON) Guidance for Planning and Optimizing Monitoring Strategies (DON, November 2010).

1.2 Report Organization

This LTM Optimization Report is organized as follows: a summary of background information including site location and history is provided in Section 2.0; a description of the selected remedy is summarized in Section 3.0; the current monitoring program is described in Section 4.0; an evaluation of the current site conditions is provided in Section 5.0; conclusions are discussed in Section 6.0; recommendations are presented in Section 7.0; and references are provided in Section 8.0.

2.0 SITE DESCRIPTION

2.1 Site Location and History

OU 2 consists of 177 acres located in the southern portion of the former McCoy Annex and includes the former 114-acre McCoy Annex Landfill which operated from 1960 to 1978. A site location map is provided as **Figure 2-1**. Landfill wastes reportedly included paint and paint thinners, asbestos, transformers, hospital wastes, low level radiological waste, batteries, aircraft parts, yard waste, and possibly waste oil. The estimated volume of waste is more than 1 million cubic yards. An aboveground storage tank farm is located offsite east of the northern portion and storage bunkers are located offsite east of the southern portion of OU2, both are operated by the Greater Orlando Aviation Authority (GOAA). The storage tank farm and storage bunkers are east of drainage canals which span the entire eastern border of OU2.

Originally identified as being of environmental concern during the 1985 Initial Assessment Study, OU 2 was investigated in three phases from May 1997 through December 2001. The investigation identified the limits of landfill materials and the thickness of the soil cover; described the types, quantities, and location of contaminants in surface soil, sediment, surface water and groundwater; and evaluated risks to human health and the environment. The Remedial Investigation (RI) report (Tetra Tech, March 2001) identified arsenic and polynuclear aromatic hydrocarbons (PAHs) in surface soil as the primary contaminants that exceeded the Florida Department of Environmental Protection (FDEP) Residential Soil Cleanup Target Levels (SCTLs). It was also determined in the RI that a 25-acre area of the former landfill had less than the 2 feet of soil cover required for landfills by FDEP guidance at the time of closure. Iron, manganese, trichloroethene (TCE), vinyl chloride (VC) and benzene were found to exceed FDEP Groundwater Cleanup Target Levels (GCTLs) in groundwater of the surficial aquifer (i.e., 0 to 30 feet below ground surface [bgs]). Natural attenuation of contaminants in groundwater, long-term monitoring, land use controls (LUCs) including groundwater use restrictions and landfill cover maintenance comprise the preferred remedial actions to support the presumptive remedy of containment.

Remedial actions at OU 2 have included localized soil removal for PAH contamination, providing adequate soil cover for areas where cover depth was insufficient, and injection of emulsified oil substrate (EOS®) as a barrier to address groundwater contamination and inhibit offsite plume migration.

The OU 2 property has been transferred to a private owner. The current use of the property is recreational, and the planned future use is industrial. The Boggy Creek Golf Course in the northern part of OU 2 was closed in February 2007. Combat City, an airsoft recreation facility, currently operates on the property.

A table listing monitoring well construction details and a figure illustrating their locations were included in the Final Basewide Well Inventory Report (Tetra Tech, October 2012) and are provided in **Appendix A**.

There are two distinct groundwater plumes associated with OU 2, one in the northern area and one in the southern area. In the updated, revised Feasibility Study (FS; Tetra Tech, August 2012a), groundwater

migrating offsite is the only medium for which contaminants of concern (COCs) were selected at OU 2. Groundwater COCs identified in the northern plume area consisted of benzene, TCE, iron and manganese. The COCs for the southern plume area consisted of benzene, chlorobenzene, tetrachloroethene (PCE), TCE, cis-1,2-dichloroethene (cis-1,2-DCE), VC, iron, and manganese. Chlorobenzene was not included as an analyte in the *Draft Final Sampling and Analysis Plan for Long-Term Monitoring at Operable Unit 2* (Tetra Tech, August 2012b).

A groundwater interim remedial action (IRA) was implemented at OU2 consisting of a permeable reactive barrier (PRB) composed of a series of wells designed for the injection of EOS® installed at the eastern border of the southern portion of OU 2. The PRB, herein referred to as the biobarrier, was installed to intercept contaminated groundwater migrating onto the GOAA property and enhance biodegradation of chlorinated volatile organic compounds (CVOCs), which are the primary COCs. Prior to the initial installation of injection wells in June 2007, baseline sampling was conducted in May 2007. Injection well locations and baseline TCE concentrations are depicted on Figure 1-2 from the Construction Completion Report (AGVIQ/CH2MHILL Joint Venture II [AGVIQ-CH2MHILL], April 2010) provided in **Appendix A**.

Phase I pilot scale injections were performed within the proposed biobarrier footprint in June 2007, followed by performance sampling in August and November. Based on findings from the pilot study, Phase II injections were conducted in the most contaminated portion of the initially proposed 400-foot long biobarrier. It was recommended that the full-scale system be implemented in phases, rather than installing the entire proposed barrier, in order to allow the Navy to evaluate treatment progress prior to additional injections. Phase II injection and monitoring wells were installed in May and June 2008, with injections performed in September and October 2008. The location of the injection wells and Phase II injections are shown on Figure 2-2 from the Construction Completion Report (AGVIQ/CH2MHILL, April 2010) provided in **Appendix A**. Note that on this figure, monitoring well MW-54A/B was not installed, and existing monitoring well OLD-OU2-MW18A/B, at approximately the same location as MW-54A/B, was used for monitoring treatment progress.

Performance sampling was conducted quarterly in January, April, August, and November 2009. The results indicated decreases in PCE and TCE concentrations in all the treatment monitoring wells within or downgradient of the biobarrier (AGVIQ-CH2MHILL, April 2010). Good mass-balance was also observed in downgradient monitoring wells, with 90 to 100% (molar ratio) transformation from TCE to cis-1,2-DCE detected in August and November 2009 sampling events. This indicated strong evidence of biotic reductive dechlorination.

In July 2010, Solutions-IES was contracted directly by NAVFAC SE to plan an enhanced remediation of the treatment area in the southern portion of OU2 to address residual CVOCs in groundwater. Solutions-IES proposed continuing with in situ bioremediation and enhancing the remedial design, by implementing the injection of a combination of two emulsified oil products (EOS® and AquaBupH™) and a bioaugmentation culture. The Sampling and Analysis Plan (SAP) for the remediation work, prepared by Solutions-IES (May 2011), was approved by FDEP in July 2011. A subsequent Work Plan was prepared to describe the in-situ

remedial design and methods to inject organic substrates and performance monitoring (Solutions-IES, December 2011).

In April 2011, Solutions-IES conducted specific capacity testing of the previously installed injection wells and found them to be negatively impacted by the 2008 EOS® injections. Therefore, in October 2011, injection wells were re-installed within the existing 150-foot biobarrier, along with the additional injection wells installed to extend the existing biobarrier an additional 150 feet to the north and 150 feet to the south. These wells are shown on Figure 4 from the Construction Completion Report (Solutions-IES, March 2013) provided in **Appendix A**.

Injections began in February 2012 with dilute 6% solution EOS® and AquaBupH™ injected into 29 wells. In April 2012, bioaugmentation was conducted with BAC-9® injected into 22 injection wells at OU 2. Post-injection performance results are not yet available.

Remedial alternatives were evaluated in the FS (Tetra Tech, August 2012a), and the preferred alternatives selected were:

- for the northern portion of OU 2, landfill containment, LUCs, and monitoring; and
- for the southern portion of OU 2, landfill containment, LUCs, monitoring, and source area groundwater control through a biobarrier. This alternative included the installation of additional injection wells to extend the existing 150-foot biobarrier 150 feet to the north and 150 feet to the south, thereby creating a 450-foot biobarrier, as shown on Figure 5-1 from the FS provided in **Appendix A**. Injection of a slow-release carbon source such as EOS® in these wells would increase the reaction rate of natural attenuation (NA) processes that are already under way within the southern area VOC groundwater plume.

2.2 Key Documents

Key documents are listed below with a brief summary of the document.

Final Revised Feasibility Study for Operable Unit 2, Tetra Tech, August 2012a. This report described the formulation and evaluation of remedial action (RA) alternatives for groundwater and buried waste at OU 2. This document was prepared as a revision to the Final FS for OU 2 (Tetra Tech, July 2003) in order to document changes in site conditions since the 2003 FS and to characterize the current risks associated with potential exposures to site-related chemicals of concern (COCs). Changes in site conditions included the development of LUCs, the sale and subsequent transfer of the property, completion of a soil IRA, and implementation of a groundwater IRA. The document was approved by FDEP on January 24, 2013.

Draft Final Sampling and Analysis Plan for *Long-Term Monitoring at Operable Unit 2*, Tetra Tech, August 2012b. This document outlined the organization, project management, objectives, planned activities, measurement, data acquisition, assessment, oversight, and data review procedures associated with the LTM

activities at OU 2. Protocols for sample collection, handling, and storage, chain-of-custody, laboratory and field analyses, data validation, and reporting were also included. Recent LTM sampling events were conducted in accordance with this SAP.

Proposed Plan for Operable Unit 2, DON, Base Realignment and Closure Program Management Office Southeast, November 2012. This plan was issued to inform the public of the Navy and FDEP's preferred alternatives and to solicit public comments pertaining to the remedial alternatives evaluated for OU 2. The plan summarized the results of the RI and FS, identified the Navy's preferred cleanup plan and reasons for the preference, described other options considered for cleanup, and encouraged public review and comment on the alternatives. No written comments were received during the public comment period in November 2012. The November 2012 Proposed Plan was resubmitted in May 2013 as Final and was approved by FDEP on July 12, 2013.

2.3 Conceptual Site Model

The source of soil contamination is the buried landfill waste. Areas of unacceptable risk due to surface soil contamination have been addressed by hot-spot excavation and removal and application of clean soil cover. Leachate from the buried waste has been identified as the likely source of groundwater contamination. Groundwater flow is generally east-southeast from the site discharging to the drainage canals on the eastern boundary of the site. The groundwater flow direction offsite, from the eastern side of the canal is also toward the canal.

No COCs were identified in surface water or sediment (Tetra Tech, August 2012a). Concentrations of inorganics in sediment did not appear to be elevated in any of the canals possibly due to periodic dredging of the canal sediments. Protection of surface water and sediment in the canals adjacent to the site is provided through treatment of groundwater which has the potential to discharge to surface water. Currently, groundwater is being treated through injection of emulsified oil products (EOS® and AquaBupH™) and bioaugmentation (BAC-9®) in a biobarrier constructed adjacent to the eastern border of the southern portion of OU 2.

The presence of chlorinated volatile organic compounds (CVOC)-impacted groundwater in wells completed in the shallow aquifer zone (6 to 16 feet bgs; Zone A) and the presence of landfill wastes suggests there is a potential for vapor intrusion should buildings be constructed on the site in the future. There are currently no buildings present on the site.

LUCs established for the site include site restrictions to prohibit residential development, unauthorized intrusive activity within the landfill boundary, and use of groundwater as a drinking water supply. These restrictions will be enforced as long as buried waste remains on site.

Further discussion of the conceptual site model (CSM) is provided in the Draft Final SAP (Tetra Tech, August 2012b). The CSM diagram, included as Figure 4 in this SAP, is provided in **Appendix A**.

2.4 Risk Assessment

The Human Health Risk Assessment (HHRA) estimates presented in the 2001 RI were updated in the revised FS (Tetra Tech, August 2012a). An Ecological Risk Assessment (ERA) was performed during the 2001 RI, and the results summarized in the revised FS.

Unacceptable risk due to surface soil contamination has been addressed by hot-spot excavation and removal and application of clean soil cover. The landfill presumptive remedy assumes inherent risk from buried waste and associated subsurface soil and source area groundwater (groundwater within the landfill). Groundwater migrating offsite is the only medium for which COCs were selected at OU 2. Risks to industrial workers and trespassers are acceptable at OU 2. All source area groundwater is assumed to be contaminated. Groundwater migrating offsite presents unacceptable risk to the hypothetical resident and is being addressed through reductive dechlorination by injection of emulsified oil products and bioaugmentation in a biobarrier constructed adjacent to the eastern border of the southern portion of OU 2.

The ERA concluded that plants and animals living on land do not appear to be adversely impacted by contaminants remaining in surface soil. Because the canal along the eastern site border contains limited habitat for aquatic receptors (plants and animals living in water), and because contaminants in the canal's surface water do not appear to be moving into downgradient water bodies, no remedial activity or further ecological study was recommended.

3.0 SELECTED REMEDY

3.1 Remedial Action Objectives

Contaminated surface soils at OU 2 that represented potential direct contact risk for a residential land use have been addressed in three soil IRAs in which contaminated soils have been removed and at least 2 feet of soil cover has been placed over buried wastes within the landfill area. Risk from direct contact with contaminated subsurface soil and buried waste is mitigated by LUCs.

LUCs developed for OU 2 were included in the Finding of Suitability to Transfer McCoy Annex, Early Transfer of Operable Unit 2 (Tetra Tech, 2008) and implemented by the issue of the Quitclaim Deed on January 31, 2008. These LUCs are required in all deeds transferring the OU 2 property.

The following summarizes the Remedial Action Objectives (RAOs) for OU 2 that were developed in the revised FS (Tetra Tech, August 2012a):

- Prevent exposure to buried waste for all human receptors under current and future site uses.
- Prevent contact with and ingestion of source area groundwater with COC concentrations in excess of preliminary remediation goal (PRGs).
- Eliminate migration of groundwater with COC concentrations in excess of PRGs to potential off-site receptors

The PRGs for the COCs in groundwater are the FDEP GCTLs, with the exception of iron for which the PRG is the Background Screening Value (BGSV; ABB-ES, August 1995).

3.1.1 Regulatory Framework

Investigation and cleanup of OU 2 is being conducted under the U.S. Navy Base Realignment and Closure Act BRAC.

The Comprehensive Environmental Response Compensation Liability Act (CERCLA) regulations, governing the treatment and handling of wastes, are applied at OU 2. Chapter 403, Florida Statutes establishes the FDEP as the primary agency responsible for the protection of the groundwater supply. The FDEP has promulgated a number of different regulations under Chapter 62 of the Florida Administrative Code (FAC), which function to regulate several types of activities with potential impacts on groundwater. Applicable FAC Chapter 62 regulations are also followed in the performance of the scope of work, as detailed in the Work Plan (Barnes, Ferland and Associates, Inc.[BFA], June 2008).

The remediation goal (RG) for the site is to reduce the contaminant concentrations to:

- NTC Background Screening Values (BGSVs, ABB-ES, August 1995);

- FDEP Residential SCTLs, Chapter 62-777, FAC; and
- FDEP Groundwater Cleanup Target Levels (GCTLs), Chapter 62-777, FAC.

The following table lists the current COCs for OU2:

Table 3-1 Summary of COCs

COCs in Groundwater*	Maximum Site Concentrations** (µg/L)	GCTL[a] (µg/L)	NADC[b] (µg/L)	BGSV[c] (µg/L)
Northern Plume				
Benzene	**8.2**	1	100	-
TCE	not detected	3	300	-
Iron	**6,310**	300	3,000	1,227
Manganese	**113**	50	500	17
Southern Plume				
Benzene	**13.4**	1	100	-
Chlorobenzene	not reported	100	1,000	-
PCE	**41.7**	3	300	-
TCE	**6,580**	3	300	-
cis-1,2-DCE	**1,530**	70	700	-
VC	**778**	1	100	-
Iron	**1,980**	300	3,000	1,227
Manganese	**18.5**	50	500	17

Notes:
µg/L = micrograms per liter
Bold font exceeds the FDEP Groundwater Cleanup Target Level (GCTL)
Shaded values exceed the Natural Attenuation Default Criteria (NADC)
* The COCs were identified in the revised FS (Tetra Tech, August 2012a).
** Data from the September 2012 Semiannual Monitoring Report (BFA, January 2013).
a FDEP GCTL – Groundwater Cleanup Target Levels F.A.C. 62-777 Table 1, February 2005
b FDEP NADC – Natural Attenuation Default Criteria F.A.C. 62-777 Table 5, February 2005
c NTC Orlando Background Screening Values (ABB-ES, August 1995)

3.2 Remedial Actions

As discussed above, surface soil contamination has been addressed by hot-spot excavation and removal and application of clean soil cover. The landfill presumptive remedy assumes inherent risk from buried waste and associated subsurface soil and source area groundwater (groundwater within the landfill). Contaminated groundwater migrating offsite poses an unacceptable risk and is being addressed through reductive dechlorination by injection of emulsified oil products and bioaugmentation in a biobarrier constructed adjacent to the eastern border of the southern portion of OU 2. As discussed above, injections in 2008 and

performance monitoring in 2009 indicated strong evidence of biotic reductive dechlorination. The most recent injections were conducted in February 2012 (29 wells), and in April 2012, bioaugmentation was also conducted with injection of BAC-9 into 22 wells. Post-injection performance results from these injections are not yet available.

3.3 Site Closeout Strategy

The presumptive remedy for OU 2 is source containment. In September 1993, United States Environmental Protection Agency (USEPA) established source containment as the presumptive remedy for municipal landfill sites regulated under CERCLA. In December 1996, EPA permitted the application of this presumptive remedy to military landfills with municipal landfill waste characteristics. Natural attenuation of contaminants in groundwater, long-term monitoring, LUCs including groundwater use restrictions, and landfill cover maintenance comprise the preferred remedial actions at OU 2 to support the presumptive remedy of containment. To address offsite migration of contaminated groundwater, a biobarrier has been installed to intercept contaminated groundwater migrating onto the GOAA property and enhance biodegradation of chlorinated volatile organic compounds (CVOCs), which are the primary COCs.

4.0 MONITORING PROGRAM

4.1 Monitoring Objectives

The objective of the LTM program at OU 2 is to ensure that the plume location is stable, to track attenuation of contaminants, and to track the effectiveness of the biobarrier. The LTM data will be used evaluate the cleanup progress and determine whether further action needs to be taken.

Four quarters of post-injection sampling was conducted to evaluate the decrease in COC concentrations resulting from the organic substrate biobarrier injections which were completed in 2012. This sampling, which was specific to the type of treatment and was focused on the localized area where treatment was performed, was completed in April 2013.

4.2 Sample Approach

Quarterly groundwater monitoring was initiated in March 2002 (Tetra Tech, 2002). In September 2005, the frequency of groundwater monitoring was changed to semiannual. LTM currently includes semiannual groundwater and surface water sampling. The semiannual sampling is conducted in April and October, with sampling for monitored natural attenuation (MNA) parameters limited to the annual April sampling event (Tetra Tech, August 2012b).

Groundwater samples are currently collected from select wells for analysis of volatile organic compounds (VOCs) that have been identified as COCs, iron, and manganese. The VOCs consist of benzene, PCE, TCE, cis-1,2-DCE, and VC. Water level measurements are also collected from the wells that are sampled. Groundwater samples from a select subset of wells are also submitted for laboratory analysis of MNA parameters (alkalinity, total dissolved solids, total organic carbon, chloride, nitrate, nitrite, sulfate, orthophosphate, ethene, ethane, and methane). In addition, the following MNA parameters are measured in the field: dissolved oxygen, ferrous iron, total sulfide, and hydrogen sulfide.

Monitoring wells used in the monitoring program include wells representing the two aquifer zones (Zone A and B) identified at OU 2. These monitoring wells include: source area wells, in plume wells, and downgradient wells for each aquifer zone. The list of monitoring wells and sampling rationale were provided in Table 17-1 of the SAP (Tetra Tech, August 2012b). This table is included in **Appendix A**.

5.0 DATA EVALUATION

5.1 Hydrogeology

Soils at the site consist of fine sands that are nearly level to gently sloping and poorly to moderately-well drained. The surface soils and subsurface sediments were deposited in marine environments and consist primarily of quartz sand with varying amounts of silt, clay, and shell fragments that vary both laterally and vertically. The water table occurs within 8 to 10 feet of the ground surface, and the unconfined surficial aquifer extends to approximately 30 feet below grade. The upper half of this aquifer is considered the shallow zone and the lower half is the intermediate zone. Monitoring wells screened in the shallow and intermediate zone are typically designated as "A" and "B" wells, respectively. The surficial aquifer is recharged by precipitation and discharges along the eastern perimeter of the site to drainage canals that intercept the shallow water table. The hydraulic conductivity of the unconfined aquifer ranges from 4 to 25 feet/per day.

The bottom of the surficial aquifer is delineated by the presence of a laterally extensive, dense, greenish clay layer which ranges in thickness from 10 to 20 feet. Cone penetrometer data indicate this layer becomes thinner and contains more sand in the extreme southern portion of the site near Boggy Creek Road. A few monitoring wells are screened in sand below the clay layer and are designated as "C" wells. Lithology is depicted on the CSM diagram included in **Appendix A**.

Groundwater flow is generally east and southeast from the site discharging to the drainage canals which parallel the eastern site boundary. Groundwater flow direction from the eastern side of the canal (offsite) is also toward the canal. The water table exhibits a relatively low gradient (less than 0.004) except in close proximity to the recharge areas (ponds) and discharge areas (drainage canals), where steeper gradients have been observed (0.04). Water levels in well pairs typically indicate an upward flow component in the surficial aquifer near the eastern canal and a downward flow component in areas away from the canal. The absence of COCs on the opposite side of the canals from OU 2, support the canal as a discharge area for both the shallow and intermediate zones. There appears to be little flow of groundwater from the shallow surficial aquifer to the deeper confined aquifer at the site. Potentiometric maps for the shallow and intermediate zones of the surficial aquifer, which were included in the revised FS, are provided in **Appendix A**.

Surface water flows southward from the site and enters Lake Gillooly which is located approximately 800 feet south of the southernmost point of the site. A map which depicts the surface water flow direction, which was included in the revised FS, is provided in **Appendix A**.

5.2 Groundwater and Surface Water Analytical Data

Beginning in 2002, groundwater and surface water sampling was conducted quarterly. In September 2005, the sampling frequency was changed from quarterly to semiannually. From November 2005 until April 2010, monthly surface water sampling for VOCs only was performed at two existing stations (SW32 and SW35) and

one new station (LG1). Surface water sampling locations are shown on Figure 1-5 (LG1) and Figure 3-1 (SW32 and SW35) from the revised FS provided in **Appendix A**.

The most recent groundwater and surface water sampling for which data is available is September 2012 (BFA, January 2013). Samples were collected in accordance with the *Sampling and Analysis Plan for Long Term Monitoring at Operable Unit 2, Naval Training Center, Orlando, Florida* (Tetra Tech, August 2012). Groundwater samples were collected from eighteen monitoring wells (5 shallow and 13 intermediate), and surface water samples were collected from six locations in the drainage canal along the eastern perimeter of the site and from the inlet to Lake Gillooly south of the site. All samples were analyzed for select VOCs (benzene, cis-1,2-DCE, isopropylbenzene, methylene chloride, PCE, TCE, and VC), and select samples were analyzed for iron and manganese. The frequency of sampling MNA parameters was changed to annually in the current Sampling and Analysis Plan (Tetra Tech, August 2012). Since these parameters were analyzed in the March 2012 annual event, they were not analyzed in September 2012. The table from the September Semiannual Monitoring Report (BFA, January 2013) summarizing sampling results from October 2008 to October 2013 is included in **Appendix A.**

As observed historically, iron and manganese in groundwater exceeded GCTLs in the northern plume area, and VOCs and iron in groundwater exceeded GCTLs in the southern plume area. In addition, benzene and VC exceeded GCTLs in one shallow well (OLD-OU2-03A) in the northern plume area. Since March 2011, benzene and VC concentrations in this well appear to fluctuate with water level elevations, increasing at higher and decreasing at lower water level elevations. This suggests the presence of a smear zone. No analytes exceeded the Freshwater Surface Water Cleanup Target Levels (FSWCTLs) in surface water in the canals east of and adjacent to the northern and southern portions of OU 2 and at the inlet to Lake Gillooly south of the site. In the monitoring wells, OLD-OU2-18B, 44B, and DP02A, within and near the biobarrier, the general decrease in TCE accompanied by an increase in the transformation products cis-1,2-DCE and VC indicates that biodegradation is occurring in the treatment area. In monitoring well OLD-OU2-DP01A, although located north of the treatment area, benzene and VC both decreased to less than GCTLs.

5.3 Trend Analysis

In the September 2012 Semiannual Monitoring Report (BFA, January 2013), individual well concentration trends were calculated for TCE and benzene for select monitoring wells (OLD-OU2-31B, 41B, 42B, and 43B) for the time period of October 2008 to September 2012. For benzene, a decreasing trend was observed for OLD-OU2-31B and no trend for OLD-OU2-41B. For TCE, no trend was generally observed for OLD-OU2-41B and 43B, however it was noted that TCE concentrations in these well increased from April to October 2012.

6.0 CONCLUSIONS

The following conclusions were based on review of historical reports for OU 2 and the September 2012 Semiannual Monitoring Report (BFA, January 2013):

- Contaminated surface soils at OU 2 that represented potential direct contact risk for a residential land use have been addressed by hot-spot excavation and removal and application of clean soil cover.

- The presumptive remedy for OU 2 is source containment. EPA has permitted the application of this presumptive remedy to military landfills with municipal landfill waste characteristics. This remedy assumes inherent risk from buried waste and associated subsurface soil and source area groundwater (groundwater within the landfill) which exist at OU 2.

- Leachate from the buried waste has been identified as the likely source of groundwater contamination. Contaminated groundwater migrating offsite poses an unacceptable risk and is being addressed through reductive dechlorination by injection of emulsified oil products and bioaugmentation in a biobarrier constructed adjacent to the eastern border of the southern portion of OU 2.

- Natural attenuation of contaminants in groundwater, long-term monitoring, LUCs, including groundwater use restrictions and landfill cover maintenance, comprise the preferred remedial actions to support the presumptive remedy of containment.

- There are two distinct groundwater plumes associated with OU 2, one in the northern area and one in the southern area. In the September 2012 LTM groundwater sampling event, benzene, VC, iron, and manganese exceeded GCTLs in the northern plume area, and VOCs and iron exceeded GCTLs in the southern plume area.

- LTM includes the collection of surface water samples from locations in the drainage canal along the eastern perimeter of the site and from the inlet to Lake Gillooly south of the site. In the September 2012 LTM surface water sampling event, no analytes exceeded the FSWCTLs.

7.0 RECOMMENDATIONS

7.1 Monitoring Points

The recommended LTM monitoring points for the annual sampling event for the north and south plumes are presented in **Tables 7-1** and **7-2**, respectively; and the recommended LTM monitoring points for the biobarrier wall located in the south plume are presented in **Table 7-3**. The LTM program includes measuring water levels in several monitoring wells and collecting groundwater samples from select monitoring wells within the landfill area, and side gradient and downgradient from the landfill area. The LTM program also includes surface water sampling from stations in the drainage canal which parallels the eastern perimeter of the site and from the inlet to Lake Gillooly south of the site.

7.2 Frequency

The current LTM program includes semiannual sampling performed in October and annual sampling performed in April. The sampling frequency for a few wells is recommended to be changed from semiannual to annual only, based on consistent historical data.

7.3 Analytical Methods

For a few wells, VOCs, manganese, and/or iron have been recommended to be removed from the LTM analytical list due detections of these analytes being below GCTLs or BGSVs in historical data (**Appendix A**, table from BFA, January 2013).

MNA parameters should be reduced to only those parameters providing necessary and meaningful information. Nitrite has historically been below detection levels, and therefore it does not appear that this data provides meaningful understanding of the attenuation process. In addition, for those wells in which VOCs were recommended to be removed from the LTM analytical list, the MNA parameters are also recommended to be removed since these would not provide meaningful understanding of attenuation of iron and/or manganese for the wells in which these analytes continue to be monitored.

Although ammonia was not identified as a COC (Tetra Tech, August 2012a), historical groundwater data, as provided in **Appendix A** (table from BFA, January 2013), indicate that ammonia exceeds the GCTL in the north plume. In the OPT Partnering Meeting Minutes from the September 29-30, 2009 meeting, it was indicated that BFA inadvertently sampled for ammonia beginning in October 2008, whereas ammonium was routinely monitored. It was also indicated that in October 2008, ammonia exceeded the GCTL in three wells (OLD-OU2-02A, -03B, and -27A) and that the wells with exceedances are in the northern portion of OU2 near the former shed where fertilizer and grass seed were stored (note that OLD-OU2-27A is in the southern portion of OU2). A review of the Naval Installation Restoration Information Solution (NIRIS) database, indicates that ammonia (EPA Method 350.1) exceeded the GCTL in the same three wells prior to October 2008 (June 2003 to June 2005), and also in wells OLD-OU2-03A, -03B, and -30B.

Since ammonia has been detected at concentrations exceeding the GCTL and is associated with landfill leachate, ammonia is included in the list of recommended analytes for LTM. For surface water, un-ionized ammonia will be calculated for comparison to the Freshwater Surface Water Cleanup Target Level (FSWCTL). Calculation will be performed in accordance with the method provided in the FDEP Chemistry Laboratory Methods Manual (FDEP, 2001).

7.4 Decision Criteria

Decision rules for OU 2 were provided in the SAP (Tetra Tech, August 2012b) and are as follows:

- If all measured groundwater concentrations are below the GCTLs (or BGSV for metals, if the BGSV is greater than the GCTL) for all wells for two consecutive semiannual monitoring events, then begin annual monitoring for two years. If all measured groundwater concentrations are below the GCTLs (or BGSV for metals, if the BGSV is greater than the GCTL) for all wells for two consecutive annual monitoring events, then evaluate appropriateness of requesting no further action for groundwater monitoring (with LUCs) and surface water for the site; if not, continue monitoring with optimization every five years.

- If all measured groundwater concentrations are below the NADC in the southern plume area upgradient of the biobarrier, then operation of the biobarrier will be discontinued; if not, then continue active remediation.

- If surface water criteria are exceeded for any VOCs at any location during each sampling event, then evaluate the remedy and consider corrective actions.

- If surface water criteria are exceeded for iron at the most downstream sampling location (OLD-OU2-LG1) during two consecutive events, then evaluate and consider corrective actions.

7.5 Well Abandonment Recommendations

No monitoring well abandonments at OU 2 are recommended at this time since groundwater remedial efforts are ongoing.

In the biobarrier area, eleven pairs of 2-inch injection wells (12A/B through 22A/B) have become plugged. These injection wells are recommended to be abandoned.

All of the monitoring points and staff gages in the drainage canal should be abandoned and/or removed, with the exception of well pairs DP01A/B and DP02A/B. All piezometers and staff gages illustrated in Figure 1-6 in **Appendix A** should be abandoned and/or removed.

8.0 REFERENCES

ABB-ES (ABB Environmental Services, Inc.), August 1995. Background Sampling Report, Naval Training Center (NTC), Orlando, Florida. Prepared for Southern Division, Naval Facilities Engineering Command (NAVFAC), Charleston, South Carolina.

AGVIQ/CH2MHILL Joint Venture II (AGVIQ-CH2MHILL), April 2010. Construction Completion Report, Phase II Pilot Injections, Biobarrrier at Operable Unit 2, Former Naval Training Center Orlando, Orlando, Florida.

Barnes, Ferland and Associates, Inc. (BFA), January 2013. September 2012 Semi-Annual Monitoring Report, Operable Unit 3 – Study Areas 8 and 9, Former NTC Orlando, Florida.

Department of the Navy (DON), November 2010. Guidance for Planning and Optimizing Monitoring Strategies.

DON, Base Realignment and Closure Program Management Office Southeast, November 2012. Draft Final Proposed Plan for Operable Unit 2, Former Naval Training Center, Orlando, Florida.

FDEP, 2001. Calculation of Un-Ionized Ammonia in Fresh Water, Chemistry Laboratory Methods Manual.

Solutions-IES, May 2011. Final Sampling and Analysis Plan, Revision No. 2, Injection of Emulsified Oil Substrate (EOS® and AquaBupH™) for In-Situ Bioremediation at Operable Unit 2 (OU2) Former Naval Training Center Orlando, Orlando, Florida.

Solutions-IES, December 2011. Work Plan, In-Situ Bioremediation of Chlorinated Solvents in Groundwater at OU2 Former Naval Training Center, Orlando, Florida.

Solutions-IES,March 2013. Construction Completion Report, In-Situ Bioremediation of Chlorinated Solvents In Groundwater Operable Unit 2, Former NTC Orlando, Orlando, Florida.

Tetra Tech NUS, Inc. (Tetra Tech), March 2001. Remedial Investigation Report for Operable Unit 2, McCoy Annex Landfill, Naval Training Center, Orlando, Florida.

Tetra Tech, July 2003. Final Feasibility Study for Operable Unit 2, Naval Training Center, Orlando, Florida.

Tetra Tech, August 2012a. Final Revised Feasibility Study, Operable Unit 2 (OU2), NTC Orlando Florida.

Tetra Tech, August 2012b. Draft Final Sampling Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) for Long Term Monitoring at Operable Unit 2, Revision 1, Former NTC, Orlando, Florida.

Tetra Tech, October 2012. Final Basewide Well Inventory Report, Former NTC, Orlando, Florida.

Tetra Tech, November 2012. Final Proposed Plan for Operable Unit 2, Former NTC, Orlando, Florida.

Tables

Table 7-1
Recommended LTM Sampling Locations and Methods
OU 2 North Plume
NTC Orlando, Florida

OU 2 North Plume											
Sample Location	**Matrix**	**Screened Interval (feet bgs)**	**Water Levels**	**VOCs**	**Fe**	**Mn**	**Ammonia (as Nitrogen)**	**Lab MNA Parameters**	**Field MNA Parameters**	**Number of Samples (identify field duplicates)**	**Sampling Frequency**
OLD-OU2-02A	GW	7.5 - 17.5	X		X	X	X			**1 + duplicate for Fe, Mn, Ammonia**	Semiannual
OLD-OU2-02B	GW	27 - 32	X		X		X			1	Semiannual
OLD-OU2-03A	GW	7.5 - 17.5	X	X	X	X	X	X	X	1	Semiannual
OLD-OU2-03B	GW	27.5 - 32.5	X		X		X			1	Semiannual
OLD-OU2-29A	GW	5 - 15	X		X					1	Annual
OLD-OU2-29B	GW	25 - 30	X		X					1	Annual
OLD-OU2-30A	GW	5 - 15	X		X	X	X			1	Annual
OLD-OU2-30B	GW	25 - 30	X		X	X	X			1	Annual
OLD-OU2-SW29	SW	NA		X	X		X			1	Semiannual
OLD-OU2-SW30	SW	NA		X	X		X			1	Semiannual
OLD-OU2-SW31	SW	NA		X	X		X			1	Semiannual
			Total	4	11	4	9				

Notes:
Fe - Iron
Mn = Manganese
MNA= Monitored Natural Attenuation
GW = groundwater
SW = surface water
NA= Not applicable
VOCs= Include benzene, **chlorobenzene,** PCE, TCE, cis-1,2-DCE, and vinyl chloride.
Lab and Field MNA parameters should be collected annually to evaluate conditions related to VOC degradation:
Lab MNA: alkalinity, ~~**TDS,**~~ TOC, anions (chloride, ~~**nitrate, nitrite,**~~ and sulfate), ~~**orthophosphate,**~~ and dissolved gasses (ethene, ethane, methane.)
Field MNA: carbon dioxide, DO, ferrous iron, total sulfide, and hydrogen sulfide.
For surface water, un-ionized ammonia shouldbe calculated for comparison to the Freshwater Surface Water Cleanup Target Level (FSWCTL) in accordance with FDEP Chemistry Laboratory Methods Manual (FDEP, 2001)
Yellow highlight and/or red font indicates change from UFP SAP (Tetra Tech, July 2012).

Table 7-2
Recommended LTM Sampling Locations and Methods
OU 2 South Plume
NTC Orlando, Florida

OU 2 South Plume										
Sample Location	**Matrix**	**Screened Interval (feet bgs)**	**Water Levels**	**VOCs**	**Fe**	**Mn**	**Lab MNA Parameters**	**Field MNA Parameters**	**Number of Samples (identify field duplicates)**	**Sampling Frequency**
OLD-OU2-12B	GW	29 - 35	X	X	X				1	Annual
OLD-OU2-18B	GW	28.5 - 33.5	X	X	X		X	X	1	Semiannual
OLD-OU2-21A	GW	7 - 17	X		X				1	Annual
OLD-OU2-21B	GW	27.5 - 32.5	X		X				1	Annual
OLD-OU2-27A	GW	6 - 16	X	X	X	X			1	Annual
OLD-OU2-27B	GW	27 - 32	X	X	X				1	Annual
OLD-OU2-28B	GW	27 - 32	X	X					1	Annual
OLD-OU2-31A	GW	5-15	X	X		X	X	X	1	Annual
OLD-OU2-31B	GW	25 - 30	X	X	X		X	X	**1 + duplicate for VOCs & Fe**	Semiannual
OLD-OU2-32A	GW	5 - 15	X							WL only
OLD-OU2-32B	GW	25 - 30	X		X				1	Annual
OLD-OU2-33A	GW	5 - 15	X		X				1	Annual
OLD-OU2-33B	GW	25 - 30	X	X	X				1	Annual
OLD-OU2-37B	GW	25 - 30	X	X	X					Annual
OLD-OU2-DP01A	GW	3.5 - 7.5	X	X					1	Annual
OLD-OU2-DP02A	GW	3.5 - 7.5	X	X	X		X	X	1	Annual
OLD-OU2-DP02B	GW	17 - 22	X	X	X				1	Annual
OLD-OU2-SW33	SW	NA	NA	X	X				1	Semiannual
OLD-OU2-SW35	SW	NA	NA	X	X				**1 + duplicate for VOCs & Fe**	Semiannual
OLD-OU2-SW36	SW	NA	NA	X	X				1	Semiannual
OLD-OU2-LG01	SW	NA	NA	X	X				1	Semiannual
			Total	16	17	2				

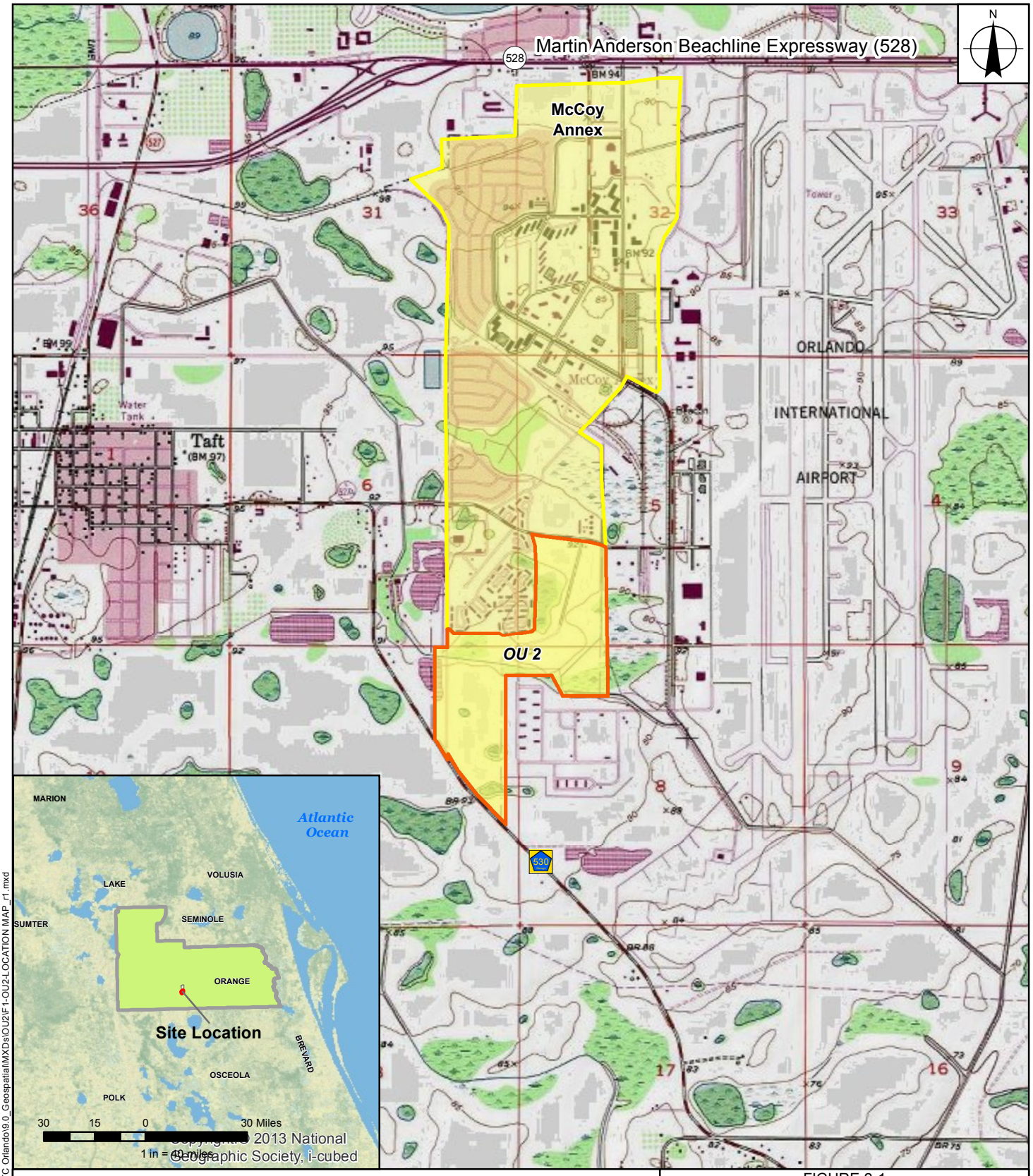
Notes:
Fe - Iron
Mn = Manganese
MNA= Monitored Natural Attenuation
GW = groundwater
SW = surface water
NA= Not applicable
VOCs= Include benzene, **chlorobenzene,** PCE, TCE, cis-1,2-DCE, and vinyl chloride.
Lab and Field MNA parameters should be collected annually to evaluate conditions related to VOC degradation:
Lab MNA: alkalinity, ~~**TDS,**~~ TOC, anions (chloride, ~~**nitrate, nitrite,**~~ and sulfate),~~ **orthophosphate,**~~ and dissolved gasses (ethene, ethane, methane.)
Field MNA: carbon dioxide, DO, ferrous iron, total sulfide, and hydrogen sulfide.
For surface water, un-ionized ammonia shouldbe calculated for comparison to the Freshwater Surface Water Cleanup Target Level (FSWCTL) in accordance with FDEP Chemistry Laboratory Methods Manual (FDEP, 2001)
Yellow highlight and/or red font indicates change from UFP SAP (Tetra Tech, July 2012).

Table 7-3
Recommended LTM Sampling Locations and Methods
OU 2 South Plume - Biobarrier Wells
NTC Orlando, Florida

OU 2 South Biobarrier Wells										
Sample Location	**Matrix**	**Screened Interval (feet bgs)**	**Water Levels**	**VOCs**	**Fe**	**Mn**	**Lab MNA Parameters**	**Field MNA Parameters**	**Number of Samples (identify field duplicates)**	**Sampling Frequency**
OLD-OU2-41B	GW	30 - 35	X	X			X	X	1	Semiannual
OLD-OU2-42B	GW	34 - 39	X	X			X	X	1	Semiannual
OLD-OU2-43B	GW	29.5 - 34.5	X	X			X	X	1	Semiannual
OLD-OU2-44B	GW	28.5 - 33.5	X	X			X	X	1	Semiannual
OLD-OU2-47B	GW	30 - 35	X	X			X	X	**1 + duplicate for VOCs**	Semiannual
OLD-OU2-51B	GW	24 - 34	X	X	X		X	X	1	Semiannual
			Total	6	1	0				

Notes:
Fe - Iron
Mn = Manganese
MNA= Monitored Natural Attenuation
GW = groundwater
VOCs= Include benzene, **chlorobenzene,** PCE, TCE, cis-1,2-DCE, and vinyl chloride.
Lab and Field MNA parameters should be collected annually to evaluate conditions related to VOC degradation:
Lab MNA: alkalinity, ~~**TDS,**~~ TOC, anions (chloride, ~~**nitrate, nitrite,**~~ and sulfate), ~~**orthophosphate,**~~ and dissolved gasses (ethene, ethane, methane.)
Field MNA: carbon dioxide, DO, ferrous iron, total sulfide, and hydrogen sulfide.
Yellow highlight and/or red font indicates change from UFP SAP (Tetra Tech, July 2012).

Figures



Legend

- Operable Unit 2
- McCoy Annex

2,400 1,200 0 2,400 Feet

1 inch = 2,500 feet

USGS Quad Map: Pine Castle
Section(s): 5,6,7,8
Township: 22S
Range: 30E

Basemap Source: Esri World Imagery
http://services.arcgisonline.com/arcgis/services/World_Imagery
© 2011 Esri, i-cubed, National Geographic Society,
USDA FSA, USGS, AEX, GeoEye, AeroGRID, Getmapping, IGP

FIGURE 2-1
SITE LOCATION MAP
SITE OU 2
FORMER NAVAL TRAINING CENTER,
ORLANDO, FLORIDA

NAVFAC Naval Facilities Engineering Command
RESOLUTION CONSULTANTS

REQUESTED BY: M. Sweeney	DATE: 11/25/2013
DRAWN BY: M. Martin	TASK ORDER NUMBER: JM22

\\usnf2fp002\data\projects\Navy CLEAN\NTC Orlando\9.0_Geospatial\MXDs\OU2\F1-OU2-LOCATION MAP_r1.mxd

Appendix A

Final Basewide Well Inventory Report (Tetra Tech NUS, Inc., October 2012)

Figure 1 – Site Map

Table - Well Construction Details

Revised Feasibility Study (Tetra Tech NUS, Inc. [Tetra Tech], August 2012a)

Figure 1-4 - Surface Water Flow

Figure 1-5 - Potentiometric Surface, Shallow Surficial Aquifer

Figure 1-6 - Potentiometric Surface, Intermediate Surficial Aquifer

Figure 2-2 - Conceptual Site Model

Figure 3-1 - Southern Area Shallow Groundwater Plume

Figure 3-2 - Southern Area, Intermediate Groundwater Plume

Figure 5-1 - Alternative S-3 Proposed Treatment Area

Draft Final Sampling and Analysis Plan for Long-Term Monitoring at Operable Unit 2 (Tetra Tech, August 2012b)

Table 17-1 - Sampling Rationale for Monitoring Locations

September 2012 Semiannual Monitoring Report, Operable Unit 2 (Barnes, Ferland and Associates, Inc., January 2013)

Table - GW Historical

Construction Completion Report, Phase II Pilot Injections, Biobarrier at Operable Unit 2 (AGVIQ/CH2MHILL Joint Venture II, April 2010)

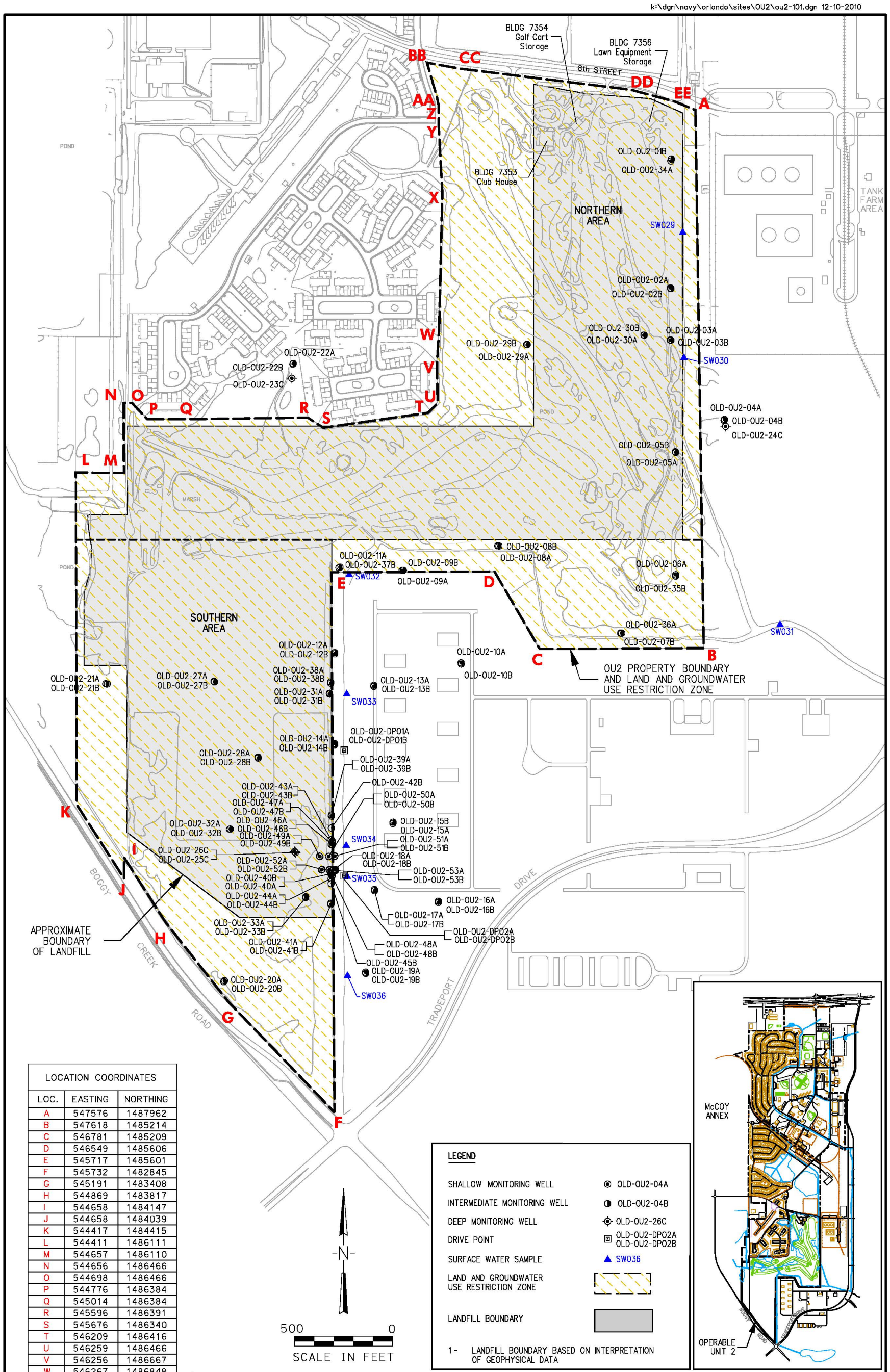
Figure 1-2 - Pilot Study Injection Locations and Baseline TCE Concentrations

Figure 2-2 – Spacing of Injection Wells, Phase II Pilot Injections

Construction Completion Report, for In Situ Bioremediation of Chlorinated Solvents In Groundwater Operable Unit 2 (Solutions-IES, March 2013)

Figure 4 – Injection Well Location Map

k:\dgn\navy\orlando\sites\OU2\ou2-101.dgn 12-10-2010



LOCATION COORDINATES		
LOC.	EASTING	NORTHING
A	547576	1487962
B	547618	1485214
C	546781	1485209
D	546549	1485606
E	545717	1485601
F	545732	1482845
G	545191	1483408
H	544869	1483817
I	544658	1484147
J	544658	1484039
K	544417	1484415
L	544411	1486111
M	544657	1486110
N	544656	1486466
O	544698	1486466
P	544776	1486384
Q	545014	1486384
R	545596	1486391
S	545676	1486340
T	546209	1486416
U	546259	1486466
V	546256	1486667
W	546267	1486848
X	546284	1487541
Y	546265	1487882
Z	546265	1487984
AA	546256	1488030
BB	546205	1488204
CC	546367	1488175
DD	547244	1488066
EE	547466	1488008

LEGEND

SHALLOW MONITORING WELL	OLD-0U2-04A
INTERMEDIATE MONITORING WELL	OLD-0U2-04B
DEEP MONITORING WELL	OLD-0U2-26C
DRIVE POINT	OLD-0U2-DP02A OLD-0U2-DP02B
SURFACE WATER SAMPLE	SW036
LAND AND GROUNDWATER USE RESTRICTION ZONE	
LANDFILL BOUNDARY	

1 - LANDFILL BOUNDARY BASED ON INTERPRETATION OF GEOPHYSICAL DATA

DRAWN BY: WRW	DATE: 6-11-2009
CHECKED BY: TKG	DATE: 6-11-2009
REVISED BY: WRW	DATE: 12-20-2010
SCALE: AS NOTED	

SITE MAP
OPERABLE UNIT 2 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.
N62467-04-D-0055

OWNER NO.

APPROVED BY: ---
DATE: ---

DRAWING NO.: FIGURE 1
REV.: 0

WELL CONSTRUCTION DETAILS
OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO
ORLANDO, FLORIDA
1 OF 2

Rev. 0

No.	WELL DESIGNATION	TYPE	WELL INNER DIAMETER (inch)	SCREEN MATERIAL	CASING MATERIAL	DATE INSTALLED	INSTALLED BY	DRILLING METHOD	FM=flush mount SU=stick up	TOTAL DEPTH (BTOC)	TOTAL DEPTH (bgs)	TOC ELEVATION	GROUND ELEVATION	TOP OF SCREEN (bgs in ft)	BOTTOM OF SCREEN (bgs in ft)	STATUS	SURVEY METHOD	SURVEYOR	DATE SURVEYED	EASTING	NORTHING	VERTICAL DATUM
1	OLD-OU2-01A	MW	2	0.010 PVC	Sch. 40 PVC	6/1/1998	TT	HS	FM	14.40	14.9	91.04	91.04	4.5	14.5	R (by OLD-OU2-34A)	S1			547,452.3850	1,487,708.3444	
2	OLD-OU2-01B	MW	2	0.010 PVC	Sch. 40 PVC	6/1/1998	TT	HS	FM	28.85	29.45	91.03	91.03	24.0	29	ACTIVE	S1			547,453.0873	1,487,712.1797	
3	OLD-OU2-02A	MW	2	0.010 PVC	Sch. 40 PVC	6/1/1998	TT	HS	SU	19.85	17.85	91.54	88.37	7.5	17.5	ACTIVE	S1	CH2M	10/29/2002	547,448.4000	1,487,055.5300	NAVD 88
4	OLD-OU2-02B	MW	2	0.010 PVC	Sch. 40 PVC	6/1/1998	TT	HS	SU	34.6	32.6	91.76	88.50	27.0	32	ACTIVE	S1	CH2M	10/29/2002	547,450.3000	1,487,051.9900	NAVD 88
5	OLD-OU2-03A	MW	2	0.010 PVC	Sch. 40 PVC	6/2/1998	TT	HS	SU	20	17.98	89.21	86.03	7.5	17.5	ACTIVE	S1	CH2M	10/29/2002	547,447.1900	1,486,789.3200	NAVD 88
6	OLD-OU2-03B	MW	2	0.010 PVC	Sch. 40 PVC	6/2/1998	TT	HS	SU	34.83	32.9	89.18	85.98	27.5	32.5	ACTIVE	S1	CH2M	10/29/2002	547,450.7700	1,486,787.5000	NAVD 88
7	OLD-OU2-04A	MW	2	0.010 PVC	Sch. 40 PVC	6/3/1998	TT	HS	SU	20.01	18.01	88.86	88.86	7.5	17.5	ACTIVE	S1			546,854.5108	1,486,462.9679	
8	OLD-OU2-04B	MW	2	0.010 PVC	Sch. 40 PVC	6/3/1998	TT	HS	SU	34.87	32.87	88.88	88.88	27.5	32.5	ACTIVE	S1			546,859.4923	1,486,465.4108	
9	OLD-OU2-05A	MW	2	0.010 PVC	Sch. 40 PVC	6/3/1998	TT	HS	SU	20.28	18.28	92.905	92.91	8	18	ACTIVE	S1			547,474.8726	1,486,213.7575	
10	OLD-OU2-05B	MW	2	0.010 PVC	Sch. 40 PVC	6/4/1998	TT	HS	SU	48.12	46.2	93.025	93.03	40.5	45.5	ACTIVE	S1			547,472.7442	1,486,217.1253	
11	OLD-OU2-06A	MW	2	0.010 PVC	Sch. 40 PVC	6/4/1998	TT	HS	SU	19.9	17.9	89.43	86.26	7.5	17.5	ACTIVE	S1	CH2M	10/29/2002	547,474.6000	1,485,590.2800	NAVD 88
12	OLD-OU2-06B	MW	2	0.010 PVC	Sch. 40 PVC	6/4/1998	TT	HS	SU	43.78	41.78	89.885	89.89	36.0	41	R (by OLD-OU2-35B)	S1			547,474.3299	1,485,588.7159	
13	OLD-OU2-07A	MW	2	0.010 PVC	Sch. 40 PVC	6/4/1998	TT	HS	SU	18.47	16.97	90.695	90.70	6.5	16.5	R (by OLD-OU2-36A)	S1			547,187.5468	1,485,290.3185	
14	OLD-OU2-07B	MW	2	0.010 PVC	Sch. 40 PVC	6/5/1998	TT	HS	SU	33.44	31.94	90.705	90.71	26.5	31.5	ACTIVE	S1			547,193.8690	1,485,290.6394	
15	OLD-OU2-08A	MW	2	0.010 PVC	Sch. 40 PVC	6/3/1998	TT	HS	SU	20.45	18.45	91.54	87.97	8	18	ACTIVE	S1	CH2M	10/29/2002	546,572.4300	1,485,737.1600	NAVD 88
16	OLD-OU2-08B	MW	2	0.010 PVC	Sch. 40 PVC	6/4/1998	TT	HS	SU	41.99	40.01	91.48	87.93	34.5	39.5	ACTIVE	S1	CH2M	10/29/2002	546,566.3200	1,485,738.0200	NAVD 88
17	OLD-OU2-09A	MW	2	0.010 PVC	Sch. 40 PVC	6/9/1998	TT	HS	SU	19.45	17.45	92.76	92.76	7	17	ACTIVE	S1			546,078.2183	1,485,610.8805	
18	OLD-OU2-09B	MW	2	0.010 PVC	Sch. 40 PVC	6/9/1998	TT	HS	SU	42.9	40.9	92.81	92.81	35.5	40.5	ACTIVE	S1			546,084.1265	1,485,611.4238	
19	OLD-OU2-10A	MW	2	0.010 PVC	Sch. 40 PVC	6/8/1998	TT	HS	FM	15	15.5	91.06	91.06	5.0	15	ACTIVE	S1			546,378.8070	1,485,139.1261	
20	OLD-OU2-10B	MW	2	0.010 PVC	Sch. 40 PVC	6/8/1998	TT	HS	FM	36	36.5	91.26	91.26	31.0	36	ACTIVE	S1			546,380.0366	1,485,133.0139	
21	OLD-OU2-11A	MW	2	0.010 PVC	Sch. 40 PVC	6/3/1998	TT	HS	SU	19.9	17.9	92.15	89.32	7.5	17.5	ACTIVE	S1	CH2M	10/29/2002	545,761.1000	1,485,628.5100	NAVD 88
22	OLD-OU2-11B	MW	2	0.010 PVC	Sch. 40 PVC	6/2/1998	TT	HS	SU	37.1	35.1	93.285	93.29	29.5	34.5	R (by OLD-OU2-37B)	S1			545,760.7379	1,485,627.4091	
23	OLD-OU2-12A	MW	2	0.010 PVC	Sch. 40 PVC	6/17/1998	TT	HS	FM	15	15.5	90.64	90.80	5	15	ACTIVE	S1	CH2M	10/29/2002	545,734.0200	1,485,186.1600	NAVD 88
24	OLD-OU2-12B	MW	2	0.010 PVC	Sch. 40 PVC	6/17/1998	TT	HS	FM	34.83	35.33	90.48	90.70	29.0	35	ACTIVE	S1	CH2M	10/29/2002	545,734.2700	1,485,192.3900	NAVD 88
25	OLD-OU2-13A	MW	2	0.010 PVC	Sch. 40 PVC	6/6/1998	TT	HS	FM	13.35	14.35	92.09	92.09	4	14	ACTIVE	S1			545,933.1426	1,485,018.6810	
26	OLD-OU2-13B	MW	2	0.010 PVC	Sch. 40 PVC	6/7/1998	TT	HS	FM	30.55	31.05	92.06	92.06	25.5	30.5	ACTIVE	S1			545,933.5234	1,485,024.3491	
27	OLD-OU2-14A	MW	2	0.010 PVC	Sch. 40 PVC	6/17/1998	TT	HS	FM	15.09	15.5	91.08	91.08	5	15	ACTIVE	S1			545,733.6386	1,484,725.9855	
28	OLD-OU2-14B	MW	2	0.010 PVC	Sch. 40 PVC	6/16/1998	TT	HS	FM	33.8	34.3	90.96	90.96	29	34	ACTIVE	S1			545,733.2971	1,484,720.8617	
29	OLD-OU2-15A	MW	2	0.010 PVC	Sch. 40 PVC	6/8/1998	TT	HS	FM	15	15.5	90.59	90.70	5	15	ACTIVE	S1	CH2M	10/29/2002	546,031.6800	1,484,321.7200	NAVD 88
30	OLD-OU2-15B	MW	2	0.010 PVC	Sch. 40 PVC	6/8/1998	TT	HS	FM	40	40.5	90.55	90.60	35	40	ACTIVE	S1	CH2M	10/29/2002	546,032.3200	1,484,328.1600	NAVD 88
31	OLD-OU2-16A	MW	2	0.010 PVC	Sch. 40 PVC	6/7/1998	TT	HS	FM	13.98	14.48	91.42	91.42	4	14	ACTIVE	S1			546,262.7119	1,483,916.6706	
32	OLD-OU2-16B	MW	2	0.010 PVC	Sch. 40 PVC	6/7/1998	TT	HS	FM	36.32	36.82	91.37	91.37	31.5	36.5	ACTIVE	S1			546,262.8511	1,483,922.8839	
33	OLD-OU2-17A	MW	2	0.010 PVC	Sch. 40 PVC	6/17/1998	TT	HS	FM	13.98	14.48	91.24	91.24	4	14	ACTIVE	S1			545,937.0221	1,483,976.4635	
34	OLD-OU2-17B	MW	2	0.010 PVC	Sch. 40 PVC	6/17/1998	TT	HS	FM	34.02	34.52	91.2	91.20	29	34	ACTIVE	S1			545,936.4897	1,483,982.9315	
35	OLD-OU2-18A	MW	2	0.010 PVC	Sch. 40 PVC	6/18/1998	TT	HS	FM	14	14.5	90.23	89.90	4	14	ACTIVE	S1	CH2M	10/29/2002	545,738.8800	1,484,086.5300	NAVD 88
36	OLD-OU2-18B	MW	2	0.010 PVC	Sch. 40 PVC	6/18/1998	TT	HS	FM	33.62	34.12	89.96	90.20	28.5	33.5	ACTIVE	S1	CH2M	10/29/2002	545,738.4100	1,484,080.5700	NAVD 88
37	OLD-OU2-19A	MW	2	0.010 PVC	Sch. 40 PVC	6/20/1998	TT	HS	FM	14.31	14.81	90.52	90.52	4	14	ACTIVE	S1			545,890.9329	1,483,560.2387	
38	OLD-OU2-19B	MW	2	0.010 PVC	Sch. 40 PVC	6/20/1998	TT	HS	FM	36.11	36.61	90.25	90.25	31	36	ACTIVE	S1			545,891.9394	1,483,553.9490	
39	OLD-OU2-20A	MW	2	0.010 PVC	Sch. 40 PVC	6/24/1998	TT	HS	SU	17.75	15.72	91.91	91.91	5	15	ACTIVE	S1			545,171.0861	1,483,516.8859	
40	OLD-OU2-20B	MW	2	0.010 PVC	Sch. 40 PVC	6/23/1998	TT	HS	SU	42.68	40.62	91.95	91.95	35	40	ACTIVE	S1			545,166.9948	1,483,511.6193	
41	OLD-OU2-21A	MW	2	0.010 PVC	Sch. 40 PVC	6/22/1998	TT	HS	SU	19.29	17.21	93.87	91.24	7	17	ACTIVE	S1	CH2M	10/29/2002	544,572.9700	1,485,030.2200	NAVD 88
42	OLD-OU2-21B	MW	2	0.010 PVC	Sch. 40 PVC	6/22/1998	TT	HS	SU	35.01	32.71	94.00	91.25	27.5	32.5	ACTIVE	S1	CH2M	10/29/2002	544,565.8100	1,485,031.6800	NAVD 88
43	OLD-OU2-22A	MW	2	0.010 PVC	Sch. 40 PVC	6/18/1998	TT	HS	SU	19.75	17.75	94.77	92.41	7.5	17.5	ACTIVE	S1			545,521.8344	1,486,667.9577	
44	OLD-OU2-22B	MW	2	0.010 PVC	Sch. 40 PVC	6/18/1998	TT	HS	SU	34.52	33	94.91	92.42	27	32	ACTIVE	S1			545,520.2728	1,486,664.6896	
45	OLD-OU2-23C	MW	2	0.010 PVC	Sch. 40 PVC	6/24/1998	TT	HS	FM	54	53.43	92.405	92.98	49.0	54	ACTIVE	S1			545,514.6167	1,486,592.3067	
46	OLD-OU2-24C	MW	2	0.010 PVC	Sch. 40 PVC	6/22/1998	TT	HS	FM	64	64.5	92.415	91.95	59.0	64	ACTIVE	S1			545,528.2131	1,484,174.6888	
47	OLD-OU2-25C	MW	2	0.010 PVC	Sch. 40 PVC	6/22/1998	TT	HS	FM	71.53	72.5	92.975	92.15	67.5	71.5	ACTIVE	S1			545,532.8018	1,484,171.2655	
48	OLD-OU2-26C	MW	2	0.010 PVC	Sch. 40 PVC	6/23/1998	TT	HS	FM	60.1	60.5	91.95	92.23	55.0	60	ACTIVE	S1			545,528.9973	1,484,176.0261	
49	OLD-OU2-27A	MW	2	0.010 PVC	Sch. 40 PVC	2/6/2001	TT	HS	SU	19	17	92.15	90.15	6.0	16	ACTIVE				545,119.4000	1,485,041.7000	
50	OLD-OU2-27B	MW	2	0.010 PVC	Sch. 40 PVC	2/6/2001	TT	HS	SU	34.5	32	92.23	89.73	27.0	32	ACTIVE				545,117.4000	1,485,044.9000	
51	OLD-OU2-28A	MW	2	0.010 PVC	Sch. 40 PVC	2/7/2001	TT	HS	SU	18.5	17	96.29	94.79	6.0	16	ACTIVE				545,342.8000	1,484,654.0000	
52	OLD-OU2-28B	MW	2	0.010 PVC	Sch. 40 PVC	2/9/2001	TT	HS	SU	34.5	32	96.29	93.79	27.0	32	ACTIVE				545,342.3000	1,484,659.1000	
53	OLD-OU2-29A	MW	1	0.010 PVC	Sch. 40 PVC	2/13/2002	TT	HS	FM	15	15.25	86.99	87.24	5.0	15	ACTIVE	S1	HESE	3/18/2002	546,716.8368	1,486,764.5090	NAVD 88
54	OLD-OU2-29B	MW	1	0.010 PVC	Sch. 40 PVC	2/13/2002	TT	HS	FM	30	30.5	86.79	87.29	25.0	30	ACTIVE	S1	HESE	3/18/2002	546,714.0729	1,486,764.8230	NAVD 88

WELL CONSTRUCTION DETAILS
OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO
ORLANDO, FLORIDA
2 OF 2

No.	WELL DESIGNATION	TYPE	WELL INNER DIAMETER (inch)	SCREEN MATERIAL	CASING MATERIAL	DATE INSTALLED	INSTALLED BY	DRILLING METHOD	FM=flush mount SU=stick up	TOTAL DEPTH (BTOC)	TOTAL DEPTH (bgs)	TOC ELEVATION	GROUND ELEVATION	TOP OF SCREEN (bgs in ft)	BOTTOM OF SCREEN (bgs in ft)	STATUS	SURVEY METHOD	SURVEYOR	DATE SURVEYED	EASTING	NORTHING	VERTICAL DATUM
55	OLD-OU2-30A	MW	1	0.010 PVC	Sch. 40 PVC	2/12/2002	TT	HS	FM	15	15	88.68	88.68	5.0	15	ACTIVE	S1	HESE	3/18/2002	547,312.7261	1,486,812.9020	NAVD 88
56	OLD-OU2-30B	MW	1	0.010 PVC	Sch. 40 PVC	2/12/2002	TT	HS	FM	30	30	88.31	88.31	25.0	30	ACTIVE	S1	HESE	3/18/2002	547,314.5095	1,486,812.2680	NAVD 88
57	OLD-OU2-31A	MW	1	0.010 PVC	Sch. 40 PVC	2/13/2002	TT	HS	SU	18	15	93.81	90.81	5.0	15	ACTIVE	S1	HESE	3/18/2002	545,706.9029	1,484,979.3730	NAVD 88
58	OLD-OU2-31B	MW	1	0.010 PVC	Sch. 40 PVC	2/13/2002	TT	HS	SU	33	30	93.53	90.53	25.0	30	ACTIVE	S1	HESE	3/18/2002	545,706.9982	1,484,983.2720	NAVD 88
59	OLD-OU2-32A	MW	1	0.010 PVC	Sch. 40 PVC	2/11/2002	TT	HS	SU	18	15.25	93.94	91.19	5.0	15	ACTIVE	S1	HESE	3/18/2002	545,200.7566	1,484,290.7520	NAVD 88
60	OLD-OU2-32B	MW	1	0.010 PVC	Sch. 40 PVC	2/11/2002	TT	HS	SU	33	30.5	94.06	91.56	25.0	30	ACTIVE	S1	HESE	3/18/2002	545,196.3172	1,484,291.0080	NAVD 88
61	OLD-OU2-33A	MW	1	0.010 PVC	Sch. 40 PVC	2/12/2002	TT	HS	SU	18	15.25	93.70	90.95	5.0	15	ACTIVE	S1	HESE	3/18/2002	545,585.7454	1,483,945.6230	NAVD 88
62	OLD-OU2-33B	MW	1	0.010 PVC	Sch. 40 PVC	2/12/2002	TT	HS	SU	33	30.5	93.42	90.92	25.0	30	ACTIVE	S1	HESE	3/18/2002	545,585.3407	1,483,941.4520	NAVD 88
63	OLD-OU2-34A	MW	1	0.010 PVC	Sch. 40 PVC	2/14/2002	TT	HS	SU	18	15.25	90.06	87.31	5.0	15	ACTIVE	S1	HESE	3/18/2002	547,450.2017	1,487,701.8220	NAVD 88
64	OLD-OU2-35B	MW	1	0.010 PVC	Sch. 40 PVC	2/15/2002	TT	HS	SU	33	32.5	89.21	88.71	25.0	30	ACTIVE	S1	HESE	3/18/2002	547,474.9802	1,485,582.2010	NAVD 88
65	OLD-OU2-36A	MW	1	0.010 PVC	Sch. 40 PVC	2/14/2002	TT	HS	SU	18	15.5	89.67	87.17	5.0	15	ACTIVE	S1	HESE	3/18/2002	547,198.7035	1,485,290.3200	NAVD 88
66	OLD-OU2-37B	MW	1	0.010 PVC	Sch. 40 PVC	2/12/2002	TT	HS	SU	33	30	92.67	89.67	25.0	30	ACTIVE	S1	HESE	3/18/2002	545,754.8976	1,485,624.5720	NAVD 88
67	OLD-OU2-38A	MW	2	0.010 PVC	Sch. 40 PVC	12/14/2004	CH2M	HS	FM	25	25	90.69	90.70	15.0	25	ACTIVE	S1	CH2M	5/30/2007	545,712.8500	1,485,034.3500	NAVD 88
68	OLD-OU2-38B	MW	2	0.010 PVC	Sch. 40 PVC	12/14/2004	CH2M	HS	FM	36	36	90.60	90.70	31.0	36	ACTIVE	S1	CH2M	5/30/2007	545,712.7800	1,485,041.1900	NAVD 88
69	OLD-OU2-39A	MW	2	0.010 PVC	Sch. 40 PVC	12/16/2004	CH2M	HS	FM	25	25	89.63	89.70	15.0	25	ACTIVE	S1	CH2M	5/30/2007	545,716.7400	1,484,357.9600	NAVD 88
70	OLD-OU2-39B	MW	2	0.010 PVC	Sch. 40 PVC	12/16/2004	CH2M	HS	FM	42	42	89.30	89.70	37.0	42	ACTIVE	S1	CH2M	5/30/2007	545,716.8600	1,484,363.2400	NAVD 88
71	OLD-OU2-40A	MW	2	0.010 PVC	Sch. 40 PVC	12/15/2004	CH2M	HS	FM	25	25	89.42	89.50	15.0	25	ACTIVE	S1	CH2M	5/30/2007	545,715.2600	1,484,060.3800	NAVD 88
72	OLD-OU2-40B	MW	2	0.010 PVC	Sch. 40 PVC	12/16/2004	CH2M	HS	FM	44.5	44.5	89.44	89.50	39.5	44.5	ACTIVE	S1	CH2M	5/30/2007	545,715.2800	1,484,064.9600	NAVD 88
73	OLD-OU2-41A	MW	2	0.010 PVC	Sch. 40 PVC	12/15/2004	CH2M	HS	FM	25	25	89.51	89.60	15.0	25	ACTIVE	S1	CH2M	5/30/2007	545,713.7300	1,483,906.5300	NAVD 88
74	OLD-OU2-41B	MW	2	0.010 PVC	Sch. 40 PVC	12/15/2004	CH2M	HS	FM	35	35	89.49	89.60	30.0	35	ACTIVE	S1	CH2M	5/30/2007	545,713.4800	1,483,911.8500	NAVD 88
75	OLD-OU2-42B	MW	2	0.010 PVC	Sch. 40 PVC	4/21/2005	CH2M	HS	FM	39.5	39.5	89.60	89.70	34.0	39	ACTIVE	S1	CH2M	5/30/2007	545,716.6700	1,484,296.8800	NAVD 88
76	OLD-OU2-43A	MW	2	0.010 PVC	Sch. 40 PVC	5/30/2007	CH2M	RS	FM	25.22	25.22	89.48	89.69	20.0	25	ACTIVE	S1	CH2M	5/30/2007	545,719.4650	1,484,237.0900	NAVD 88
77	OLD-OU2-43B	MW	2	0.010 PVC	Sch. 40 PVC	4/20/2005	CH2M	HS	FM	35	35	89.37	89.60	29.5	34.5	ACTIVE	S1	CH2M	5/30/2007	545,715.5900	1,484,236.9100	NAVD 88
78	OLD-OU2-44A	MW	2	0.010 PVC	Sch. 40 PVC	5/30/2007	CH2M	RS	FM	25.13	25.13	89.40	89.54	20.0	25	ACTIVE	S1	CH2M	5/30/2007	545,715.6340	1,484,040.7740	NAVD 88
79	OLD-OU2-44B	MW	2	0.010 PVC	Sch. 40 PVC	4/19/2005	CH2M	HS	FM	34.5	34.5	89.39	89.30	28.5	33.5	ACTIVE	S1	CH2M	5/30/2007	545,713.8700	1,484,038.0700	NAVD 88
80	OLD-OU2-45B	MW	2	0.010 PVC	Sch. 40 PVC	4/19/2005	CH2M	HS	FM	35	35	89.38	89.50	29.8	34.5	ACTIVE	S1	CH2M	5/30/2007	545,715.6500	1,484,012.5000	NAVD 88
81	OLD-OU2-46A	MW	2	0.010 PVC	Sch. 40 PVC	5/30/2007	CH2M	RS	FM	25.16	25.16	89.64	89.80	20.0	25	ACTIVE	S1	CH2M	5/30/2007	545,720.8930	1,484,212.0960	NAVD 88
82	OLD-OU2-46B	MW	2	0.010 PVC	Sch. 40 PVC	5/31/2007	CH2M	RS	FM	35.45	35.45	89.23	89.38	30.0	35	ACTIVE	S1	CH2M	5/31/2007	545,715.9130	1,484,212.2060	NAVD 88
83	OLD-OU2-47A	MW	2	0.010 PVC	Sch. 40 PVC	5/31/2007	CH2M	RS	FM	25.43	25.43	89.56	89.56	20.0	25	ACTIVE	S1	CH2M	5/31/2007	545,721.0360	1,484,224.8260	NAVD 88
84	OLD-OU2-47B	MW	2	0.010 PVC	Sch. 40 PVC	5/30/2007	CH2M	RS	FM	35.09	35	89.58	89.67	30.0	35	ACTIVE	S1	CH2M	5/30/2007	545,721.1080	1,484,228.5740	NAVD 88
85	OLD-OU2-48A	MW	2	0.010 PVC	Sch. 40 PVC	6/1/2007	CH2M	RS	FM	28.27	28.27	89.64	89.68	23.0	28	ACTIVE	S1	CH2M	6/1/2007	545,720.4530	1,484,051.4130	NAVD 88
86	OLD-OU2-48B	MW	2	0.010 PVC	Sch. 40 PVC	5/31/2007	CH2M	RS	FM	38.46	38.46	89.62	89.71	29.0	31	ACTIVE		CH2M	5/31/2007	545,720.5970	1,484,055.2240	NAVD 88
87	OLD-OU2-49A	MW	2	0.010 PVC	Sch. 40 PVC	5/30/2008	CH2M	RT	FM	25	25	89.60	89.66	15.0	25	ACTIVE	S1	CH2M	6/1/2007	545,656.4800	1,484,153.2200	NAVD 88
88	OLD-OU2-49B	MW	2	0.010 PVC	Sch. 40 PVC	5/20/2008	CH2M	RT	FM	35	35	89.62	89.68	25.0	35	ACTIVE	S1	CH2M	6/1/2007	545,658.3700	1,484,150.8700	NAVD 88
89	OLD-OU2-50A	MW	2	0.010 PVC	Sch. 40 PVC	6/5/2008	CH2M	RT	FM	25	25	87.52	87.45	15.0	25	ACTIVE	S1	CH2M	6/1/2007	545,703.0600	1,484,152.3207	NAVD 88
90	OLD-OU2-50B	MW	2	0.010 PVC	Sch. 40 PVC	5/20/2008	CH2M	RT	FM	33	33	87.57	87.58	23.0	33	ACTIVE	S1	CH2M	6/1/2007	545,702.6300	1,484,150.6500	NAVD 88
91	OLD-OU2-51A	MW	2	0.010 PVC	Sch. 40 PVC	5/28/2008	CH2M	RT	FM	26.5	26.5	90.79	90.66	16.5	26.5	ACTIVE	S1	CH2M	6/1/2007	545,734.4256	1,484,153.9300	NAVD 88
92	OLD-OU2-51B	MW	2	0.010 PVC	Sch. 40 PVC	5/27/2008	CH2M	RT	FM	34	34	90.72	90.54	24.0	34	ACTIVE	S1	CH2M	6/1/2007	545,734.4500	1,484,152.2700	NAVD 88
93	OLD-OU2-52A	MW	2	0.010 PVC	Sch. 40 PVC	5/29/2008	CH2M	RT	FM	25	25	88.48	88.54	15.0	25	ACTIVE	S1	CH2M	6/1/2007	545,668.7400	1,484,085.0144	NAVD 88
94	OLD-OU2-52B	MW	2	0.010 PVC	Sch. 40 PVC	5/20/2008	CH2M	RT	FM	35	35	88.46	88.53	25.0	35	ACTIVE	S1	CH2M	6/1/2007	545,666.0904	1,484,083.4400	NAVD 88
95	OLD-OU2-53A	MW	2	0.010 PVC	Sch. 40 PVC	6/4/2008	CH2M	RT	FM	25	25	88.36	88.44	15.0	25	ACTIVE	S1	CH2M	6/1/2007	545,706.7400	1,484,084.7600	NAVD 88
96	OLD-OU2-53B	MW	2	0.010 PVC	Sch. 40 PVC	5/20/2008	CH2M	RT	FM	35	35	88.31	88.05	25.0	35	ACTIVE	S1	CH2M	6/1/2007	545,705.7200	1,484,081.7400	NAVD 88
	OLD-OU2-54A	wells OLD-OU2-54A and -54B appear on some CH2M Hill maps but were not installed; used wells -18A and -18B instead																				
	OLD-OU2-54B																					
97	DP01A	MW	1.25	0.010 PVC	Sch. 40 PVC	2/13/2001	TT	HA	SU	11.00	7.5	82.68		3.5	7.5	ACTIVE				545,783.4000	1,484,691.5000	
98	DP01B	MW	1	0.010 PVC	Sch. 40 PVC	6/6/2001	TT	DPT	SU	24.80	22	83.42		17.0	22	ACTIVE				545,779.5000	1,484,692.0000	
99	DP02A	MW	1.25	0.010 PVC	Sch. 40 PVC	2/14/2001	TT	HA	SU	11.00	7.5	82.53		3.5	7.5	ACTIVE				545,983.6000	1,484,002.3000	
100	DP02B	MW	1	0.010 PVC	Sch. 40 PVC	6/6/2001	TT	DPT	SU	24.80	22	83.7		17.0	22	ACTIVE				545,780.3000	1,483,998.5000	

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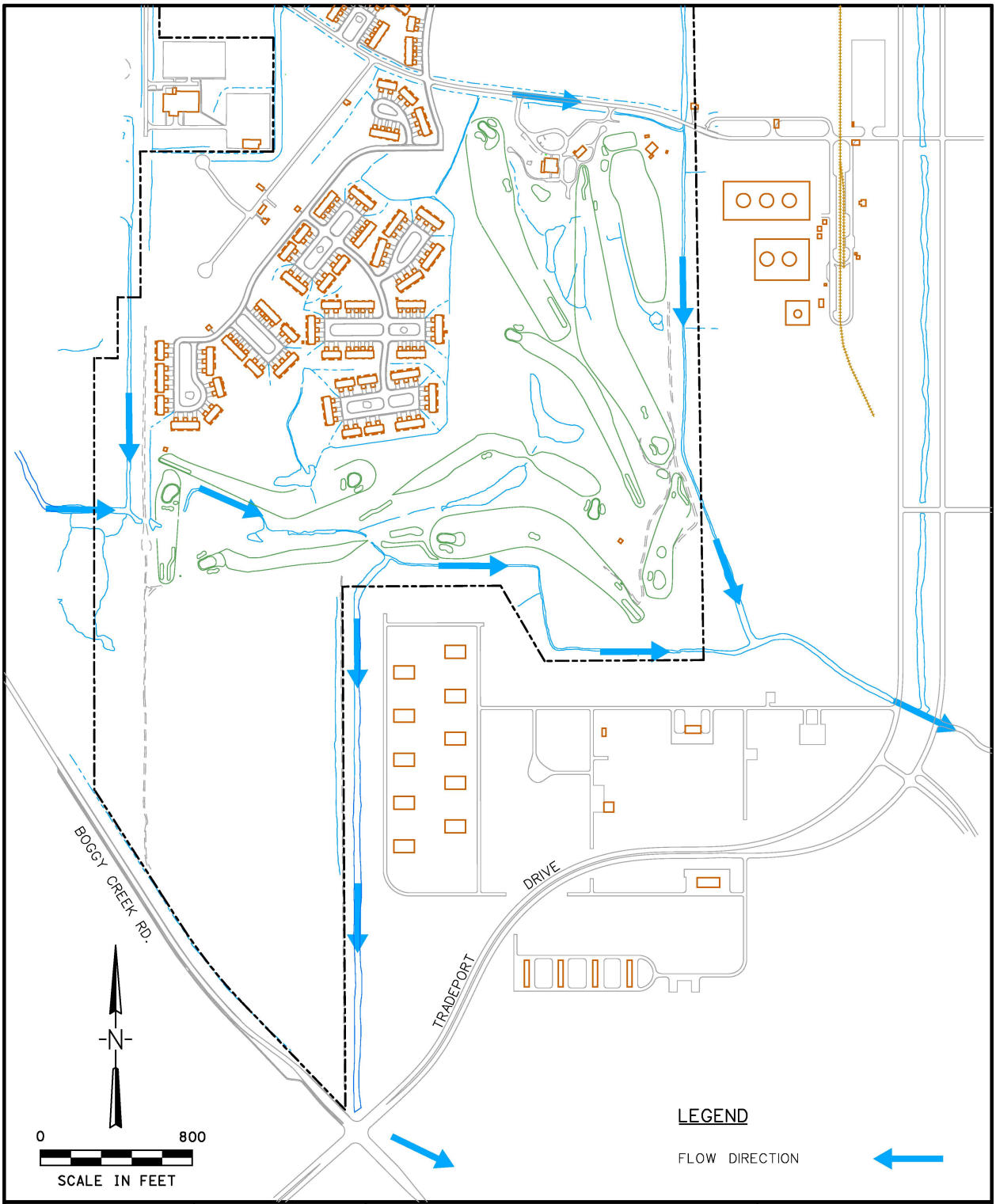

DRAWN BY WRW	DATE 5/18/2010	SURFACE WATER FLOW OPERABLE UNIT 2	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. ----------
REVISED BY ---	DATE --------		APPROVED BY --- / DATE ---------
SCALE AS NOTED		NAVAL TRAINING CENTER ORLANDO, FLORIDA	DRAWING NO. FIGURE 1-4 / REV. 0

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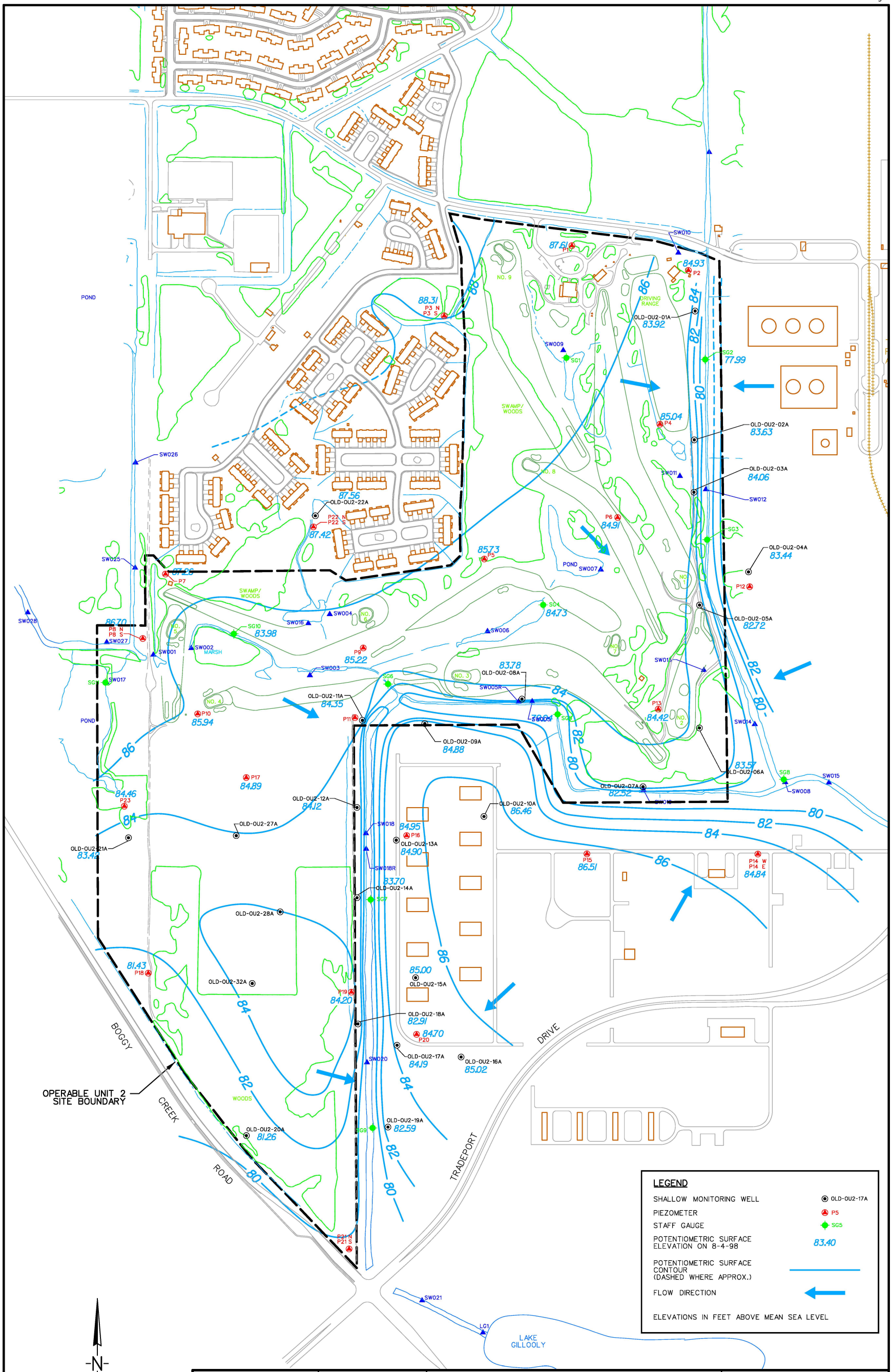

DRAWN BY WRW	DATE 5/18/2010	POTENTIOMETRIC SURFACE SHALLOW SURFICIAL AQUIFER OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. ---
REVISED BY ---	DATE ----		APPROVED BY --- DATE ----
SCALE AS NOTED			DRAWING NO. FIGURE 1-5 REV. 0

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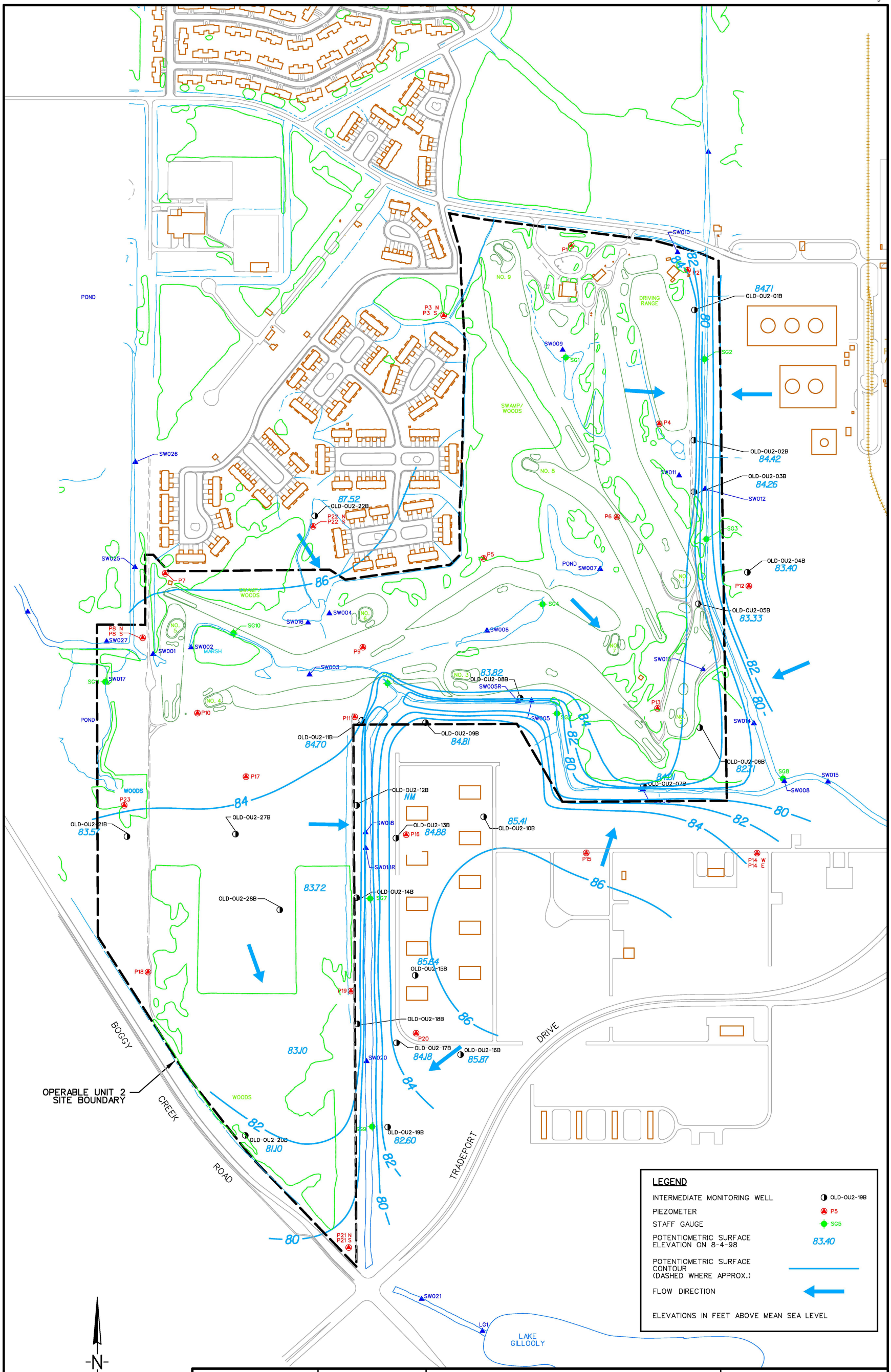

DRAWN BY WRW	DATE 5/18/2010	POTENTIOMETRIC SURFACE INTERMEDIATE SURFICIAL AQUIFER OPERABLE UNIT 2 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/18/2010		OWNER NO. --------
REVISED BY ---	DATE ----		APPROVED BY --- / DATE ----
SCALE AS NOTED			DRAWING NO. FIGURE 1-6 / REV. 0

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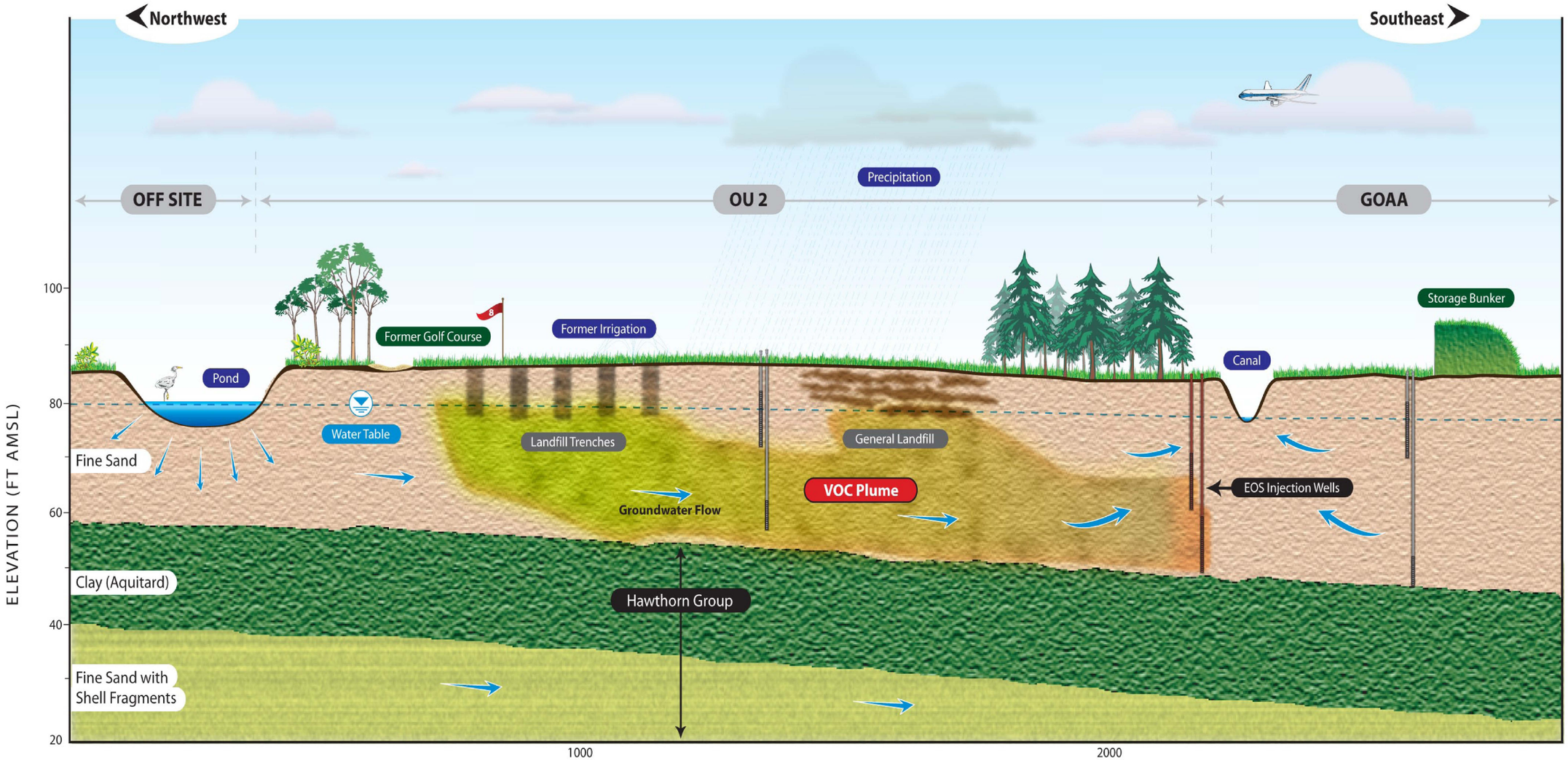

DRAWN BY WRW	DATE 5/20/2010		CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 5/20/2010	CONCEPTUAL SITE MODEL OPERABLE UNIT 2	OWNER NO. ---------
REVISED BY ---	DATE ---------		APPROVED BY --- DATE ---------
SCALE AS NOTED		NAVAL TRAINING CENTER ORLANDO, FLORIDA	DRAWING NO. FIGURE 2-2 REV. 0

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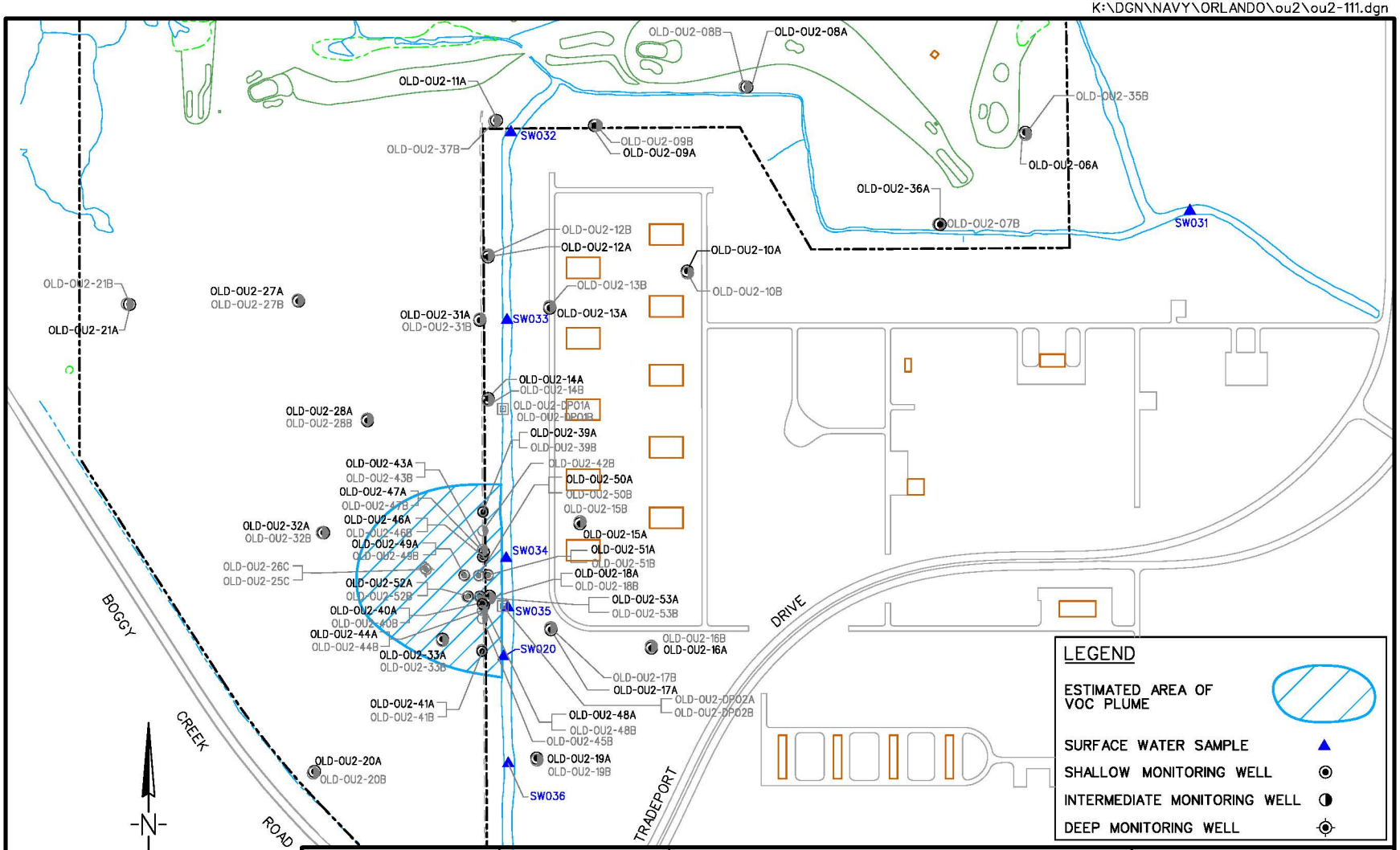

DRAWN BY: WRW	DATE: 6/11/2010
CHECKED BY: TKG	DATE: 6/11/2010
REVISED BY: WRW	DATE: 2/16/2011
SCALE: AS NOTED	

SOUTHERN AREA SHALLOW GROUNDWATER PLUME OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO, FLORIDA

CONTRACT NO.	N62467-04-D-0055
OWNER NO.	--------
APPROVED BY	---
DATE	--------
DRAWING NO.	FIGURE 3-1
REV.	0

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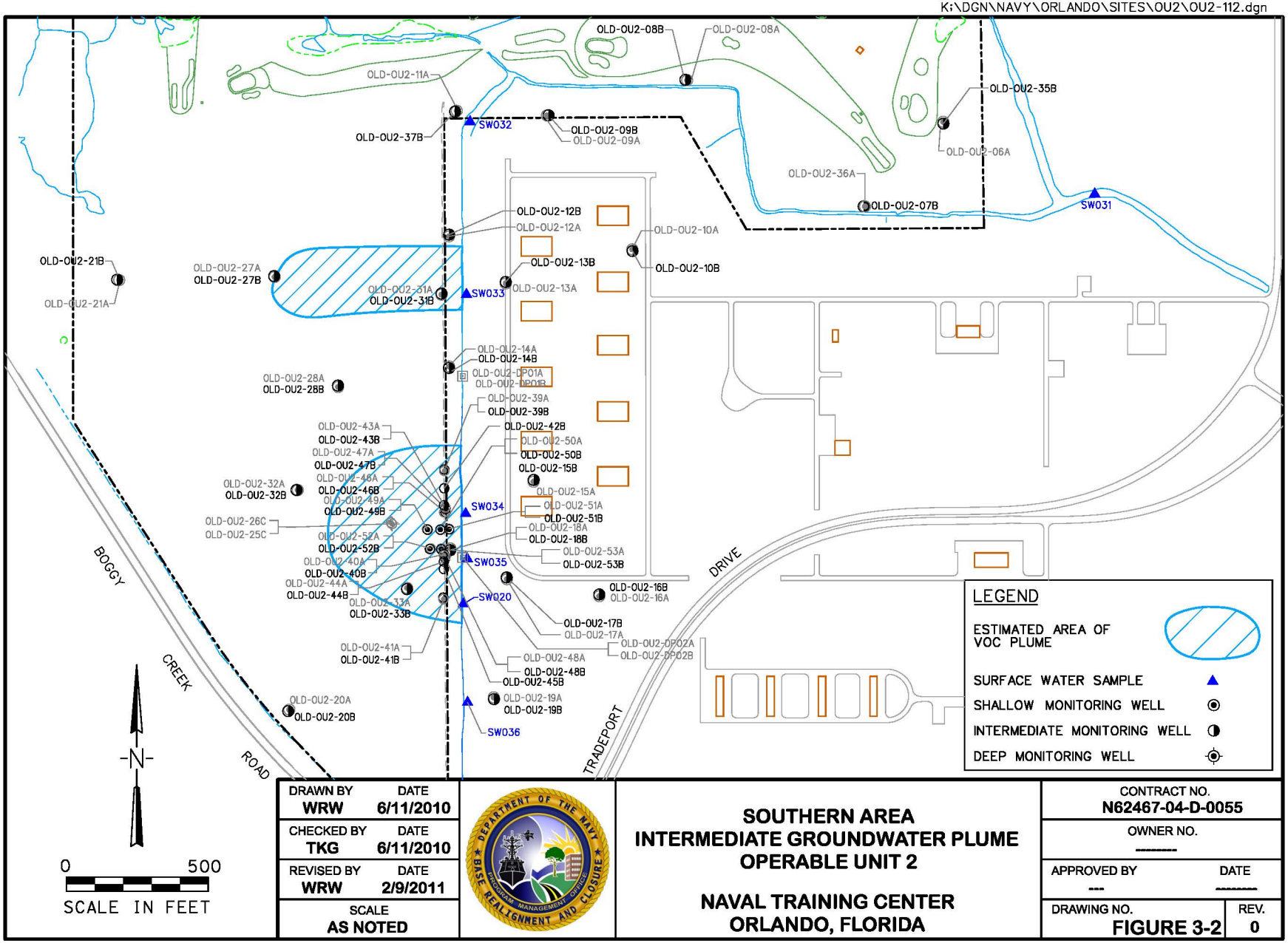

DRAWN BY: WRW	DATE: 6/11/2010
CHECKED BY: TKG	DATE: 6/11/2010
REVISED BY: WRW	DATE: 2/9/2011
SCALE: AS NOTED	

SOUTHERN AREA INTERMEDIATE GROUNDWATER PLUME OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO, FLORIDA

CONTRACT NO.	N62467-04-D-0055
OWNER NO.	--------
APPROVED BY	---
DATE	--------
DRAWING NO.	FIGURE 3-2
REV.	0

NBRC-AH.dgn

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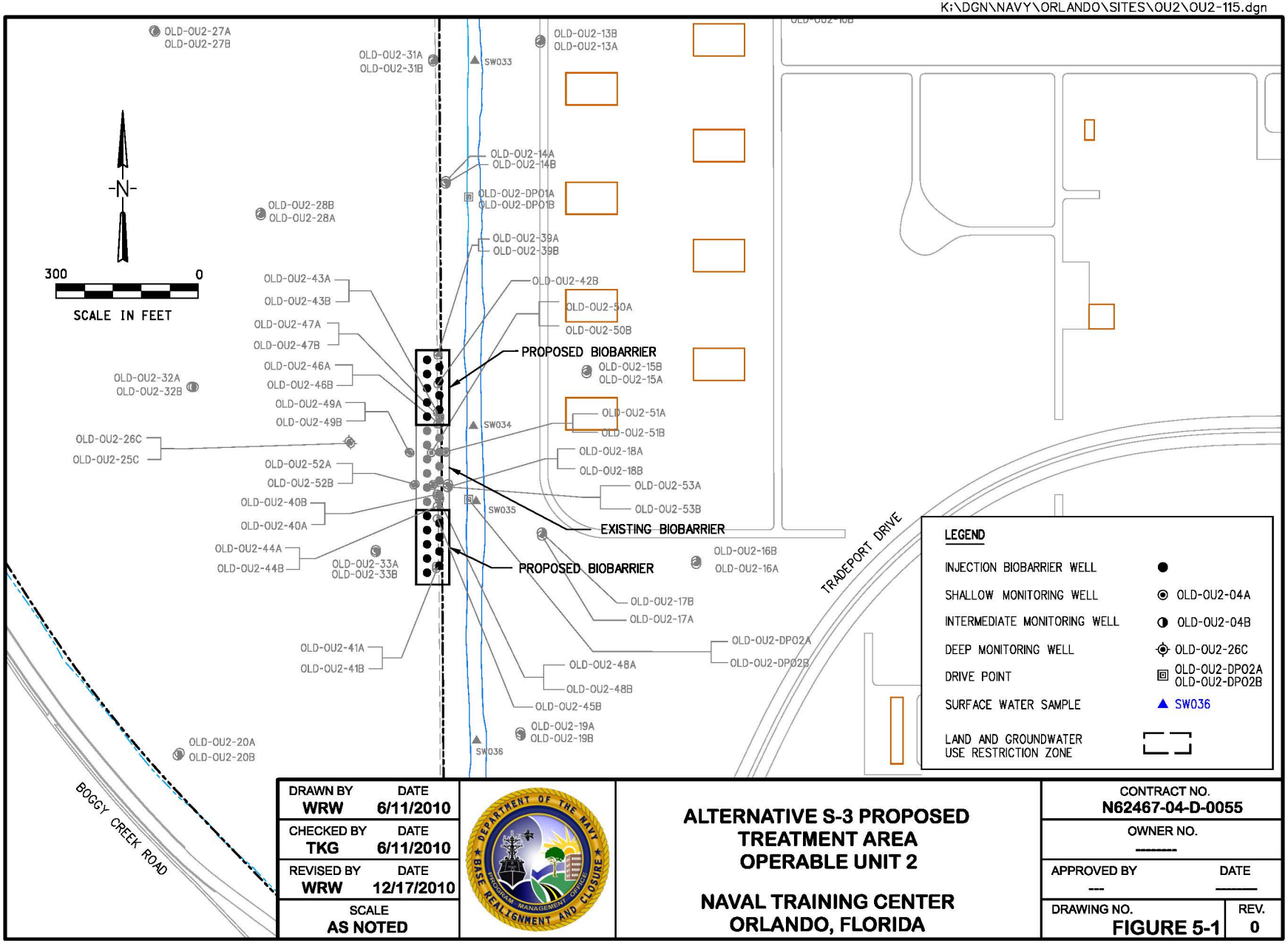


DRAWN BY / DATE	WRW 6/11/2010
CHECKED BY / DATE	TKG 6/11/2010
REVISED BY / DATE	WRW 12/17/2010
SCALE	AS NOTED

ALTERNATIVE S-3 PROPOSED TREATMENT AREA OPERABLE UNIT 2

NAVAL TRAINING CENTER ORLANDO, FLORIDA

CONTRACT NO.	N62467-04-D-0055
OWNER NO.	---------
APPROVED BY / DATE	--- / -------
DRAWING NO.	FIGURE 5-1
REV.	0

NBRC-AH.dgn

TABLE 17-1

SAMPLING RATIONALE FOR MONITORING LOCATIONS
OU 2

Well Number	Matrix	Screened Interval (feet bgs)	Rationale and comments
OLD-OU2-02A	Groundwater	7.5 to 17.5	Downgradient; to monitor plume concentration trends and natural attenuation.
OLD-OU2-02B	Groundwater	27 to 32	Downgradient; to monitor plume concentration trends and natural attenuation.
OLD-OU2-03A	Groundwater	7.5 to 17.5	Downgradient; to monitor plume concentration trends and natural attenuation.
OLD-OU2-03B	Groundwater	27.5 to 32.5	Downgradient; to monitor plume concentration trends and natural attenuation.
OLD-OU2-12B	Groundwater	29 to 35	Plume edge, side gradient; to monitor plume stability
OLD-OU2-18B	Groundwater	28.5 to 33.5	Immediately downgradient of barrier; to monitor barrier performance.
OLD-OU2-21A	Groundwater	7 to 17	Upgradient of source area; to monitor background conditions and natural attenuation.
OLD-OU2-21B	Groundwater	27.5 to 32.5	Upgradient of source area; to monitor background conditions and natural attenuation.
OLD-OU2-27A	Groundwater	6 to 16	In source area; to monitor plume changes and natural attenuation.
OLD-OU2-27B	Groundwater	27 to 32	In source area; to monitor plume changes and natural attenuation.
OLD-OU2-28B	Groundwater	27 to 32	In source area; to monitor plume changes and natural attenuation.
OLD-OU2-29A	Groundwater	5 to 15	Upgradient of source area; to monitor background conditions and natural attenuation.
OLD-OU2-29B	Groundwater	25 to 30	Upgradient of source area; to monitor background conditions and natural attenuation.
OLD-OU2-30A	Groundwater	5 to 15	In plume; to monitor plume changes.
OLD-OU2-30B	Groundwater	25 to 30	In plume; to monitor plume changes and natural attenuation.
OLD-OU2-31A	Groundwater	5 to 15	Downgradient of source area; to monitor potential off-site migration, plume stability, and natural attenuation.
OLD-OU2-31B	Groundwater	25 to 30	Downgradient of source area; to monitor potential off-site migration, plume stability and natural attenuation.
OLD-OU2-32A	Groundwater	5 to 15	In plume; to monitor plume changes and natural attenuation.
OLD-OU2-32B	Groundwater	25 to 30	In plume; to monitor plume changes and natural attenuation.
OLD-OU2-33A	Groundwater	5 to 15	In plume; to monitor plume changes and natural attenuation.
OLD-OU2-33B	Groundwater	25 to 30	In plume; to monitor plume changes and natural attenuation.
OLD-OU2-37B	Groundwater	25 to 30	Plume edge, side gradient; to monitor plume stability.
OLD-OU2-41B	Groundwater	30 to 35	Southernmost downgradient of source area; to monitor potential off-site migration.

TABLE 17-1

SAMPLING RATIONALE FOR MONITORING LOCATIONS
OU 2

Well Number	Matrix	Screened Interval (feet bgs)	Rationale and comments
OLD-OU2-42B	Groundwater	34 to 39	Northernmost downgradient of barrier to monitor potential off-site migration.
OLD-OU2-43B	Groundwater	29.5 to 34.5	Immediately downgradient of barrier to monitor potential off-site migration, slightly deeper screen interval than nearby well.
OLD-OU2-44B	Groundwater	28.5 to 33.5	Immediately downgradient of barrier; to monitor potential off-site migration.
OLD-OU2-47B	Groundwater	30 to 35	Immediately downgradient of barrier; to monitor potential off-site migration.
OLD-OU2-51B	Groundwater	24 to 34	Immediately downgradient of barrier; to monitor potential off-site migration.
OLD-OU2-DP01A	Groundwater	3.5 to 7.5	Downgradient of barrier; to monitor potential impact to surface water.
OLD-OU2-DP02A	Groundwater	3.5 to 7.5	Downgradient of barrier; to monitor potential impact to surface water.
OLD-OU2-DP02B	Groundwater	17 to 22	Downgradient of barrier; to monitor potential impact to surface water.
OLD-OU2-SW29	Surface water	NA	Upstream to monitor potential off-site impacts to surface water.
OLD-OU2-SW30	Surface water	NA	Immediately downgradient of northern plume to monitor impact to surface water.
OLD-OU2-SW31	Surface water	NA	Most downgradient sample location monitoring northern surface water area.
OLD-OU2-SW33	Surface water	NA	Immediately downgradient of groundwater plume to monitor impact to surface water.
OLD-OU2-SW35	Surface water	NA	Immediately downgradient of groundwater plume to monitor impact to surface water.
OLD-OU2-SW36	Surface water	NA	Downstream surface water monitoring location.
OLD-OU2-LG01	Surface water	NA	Point of compliance surface water monitoring location.

Appendix A Operable Unit 2 Analytical Results 10-2008 to 09-2012		Chemical Name	Benzene	cis-1,2-Dichloroethylene	Isopropylbenzene	Methylene chloride	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Iron	Manganese	Methane	Ethane	Ethene	Carbon Dioxide	Oxygen	Nitrogen	Hydrogen	Alkalinity, Total as CaCO3	Chloride	Nitrogen, Ammonia	Nitrogen, Nitrate	Nitrogen, Nitrite	Orthophosphate	Sulfate	Disolved Organic Carbon
		CAS-RN	71-43-2	156-59-2	98-82-8	75-09-2	127-18-4	79-01-6	75-01-4	7439-89-6	7439-96-5	74-82-8	74-84-0	74-85-1	124-38-9	7782-44-7	17778-88-0	1333-74-0	E1640192	16887-00-6	E966655	14797-55-8	14797-65-0	14265-44-2	14808-79-8	E701250
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	nM	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		GCTL	1	70	0.8	5	3	3	1	300	50	-	-	-	-	-	-	-	-	250	2.8	10	1	-	250	-
		NADSC	10	700	8	500	300	30	10	3000	500	-	-	-	-	-	-	-	-	2500	28	1000	100	-	25000	-
Well ID	Lab ID	BGSV	-	-	-	-	-	-	-	1227	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLD-OU2-02A	F60667-3	10/06/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	24300	72.2	NA	NA	NA	NA	2.4	NA	1.2	16	0.050 U	12	12.4	0.080 I	269	NA	23.9
	F64318-18	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	34300	209	2010	0.32 U	0.43 U	NA	3.1	NA	1.3	620	24.4	51.7	0.050 U	0.050 U	0.040 U	1.0 U	73.4
	F68804-6	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	7520	64.6	1060	0.32 U	0.43 U	NA	3.4	NA	3.1	215	24.1	14.5	0.050 U	0.050 U	0.23	8	0.22 U
	F72702-3	04/05/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	22500	153	1020	0.32 U	0.43 U	NA	NA	NA	7.3	374	24.9	20.4	1	0.050 U	0.020 U	6.3	55.6
	F77624-1	10/28/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	11200	62.6	1330	0.32 U	0.43 U	NA	1.11	NA	NA	201	31.4	9.7	0.050 U	0.050 U	11.7	12.8	26.7
	F81361-1	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	9250	35.1	1600	0.015 J	0.026	220	2.1	12	NA	148	30	4.9	0.050 U	0.050 U	0.24	4.2	40.1
	F87010-1	10/19/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	13900	70.4	294	1.8	2.2	190	6	17	NA	359	18.5	2.3	5	6.7	0.15	58.8	48.6
	F91589-1	03/27/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	9570	177	730	0.01	0.034	230	3.8	15	NA	487	35.9	12.3	0.31	0.10 U	0.22	50	159
	F97815-8	10/09/2012	0.21 U	0.24 U	0.20 U	2.0 U	0.32 U	0.31 U	0.44 U	5620	28.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-02B	F60666-2	10/07/2008	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	3870	16.7	77.3	0.32 U	0.43 U	170	1.4	17	0.92	11.8	0.050 U	0.11	27	0.1	12.4	NA	59.1
	F64318-19	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	2660	14.9 I	114	0.32 U	0.43 U	NA	4.8	NA	1.3	26.4	47.8	0.050 U	0.11	0.050 U	0.15	19.3	9.9
	F68804-7	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	2980	22.7	153	0.32 U	0.43 U	NA	3.7	NA	2	27.2	46.8	0.44	0.050 U	0.050 U	1.1	14	0.22 U
	F72702-1	04/05/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	7900	13.6 I	235	0.32 U	0.43 U	NA	NA	NA	6.1	14.9	48	0.34	0.050 U	0.050 U	1.3	13.5	9.8
	F77624-2	10/28/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2850	14.3 I	327	0.32 U	0.43 U	NA	0.79	NA	NA	26.9	51.2	0.38	0.050 U	0.050 U	0.45	12.1	8.8
	F81361-3	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2790	12.7 I	570	0.009 J	0.015 J	160	1.5	12	NA	20.9	51.1	0.44	0.056 I	0.050 U	0.77	13.4	19.1
	F87010-2	10/19/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2080	10.6 I	448	0.32 U	0.43 U	140	6	16	NA	21.8	48.4	0.2	0.069 I	0.050 U	1.4	4.9	12.3
	F91589-2	03/27/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2140	9.4 I	930	0.016	0.052	130	1.8	14	NA	28.7	43.7	0.41	0.050 U	0.050 U	0.83	3.4	20.4
	F97815-9	10/09/2012	0.21 U	0.24 U	0.20 U	2.0 U	0.32 U	0.31 U	0.44 U	595	9.5 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-03A	F60666-1	10/07/2008	8.8	1.4	NA	1.0 U	0.22 U	0.32 I	2.9	12600	66.5	4130	0.32 U	0.43 U	NA	2.4	NA	1.7	55.1	0.050 U	0.83	8	0.090 I	37.3	NA	62.7
	F64318-16	03/31/2009	0.71	0.20 U	0.20 U	1.1	0.22 U	0.32 U	0.30 U	6100	337	3490	0.32 U	0.43 U	NA	4.4	NA	1.1	203	70.6	4.3	0.13	0.050 U	0.20 U	15.2	30.1
	F68838-16	10/15/2009	7.6	1.2	0.20 U	1.0 U	0.22 U	0.32 U	3.4	9440	53.7	2460	0.32 U	0.43 U	NA	3.3	NA	5.5	65.5	64.7	0.98	0.050 U	0.050 U	0.16	1.0 U	21.3
	F72652-1	04/02/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	6080	477	322	0.32 U	0.43 U	NA	NA	NA	4.3	106	14.2	0.86	0.070 I	0.050 U	0.036 I	39	22.2
	F77624-3	10/28/2010	9.6	1.2	0.22 I	2.0 U	0.25 U	0.26 U	3	9600	52.5	2700	0.32 U	0.43 U	NA	1.19	NA	NA	54.1	71.7	0.72	0.050 U	0.050 U	0.077 I	1.7 I	14.6
	F81361-5	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	6420	647	170	0.016 J	0.018 J	210	1.5	12	NA	80.8	41.9	1.7	0.5	0.050 U	0.082 I	89.3	30.9
	F87053-1	10/20/2011	6	0.99 I	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	8340	43.1	3360	0.32 U	0.43 U	370	4.1	10	NA	49.5	68.6	0.56	0.050 U	0.050 U	0.16	1.0 U	16.4
	F91589-3	03/27/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	29600	777	840	0.023	0.056	180	3.3	18	NA	261	49.3	5.2	0.46	0.050 U	0.021 I	47.3	41.2
	F97878-1	10/10/2012	8.2	1.3	0.20 U	2.0 U	0.32 U	0.31 U	2.5	6310	113	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-03B	F60665-4	10/06/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	4.4	0.30 U	14500	23.2	315	0.32 U	0.43 U	NA	0.83	NA	NA	39.9	0.050 U	7.3	24.4	0.050 U	61.5	NA	61
	F64318-17	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	9060	21.5	351	0.32 U	0.43 U	NA	5.4	NA	7.7	72.1	64.6	6.3	0.11	0.050 U	0.26	18.1	10.9
	F68838-17	10/15/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	12700	20.3	437	0.32 U	0.43 U	NA	4.4	NA	2.5	72.4	59.2	5.8	0.050 U	0.050 U	0.20 U	15.1	14.9
	F72652-2	04/02/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	9190	15.3	241	0.32 U	0.43 U	NA	NA	NA	6	61	53.1	4.6	0.050 U	0.050 U	1	13.7	14.2
	F77624-4	10/28/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	7850	19.3	321	0.32 U	0.43 U	NA	0.51	NA	NA	47.9	55.4	3.7	0.050 U	0.050 U	0.020 U	12.6	10.4
	F81361-6	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	8340	16	240	0.032	0.028	190	1.8	16	NA	41.6	56.4	3.9	0.065 I	0.050 U	1	22.8	13.9
	F87053-3	10/20/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	8250	14.3 I	751	0.32 U	0.43 U	180	6	16	NA	49.1	54.8	NA	0.050 U	0.050 U	0.86	18.8	29.7
	F91589-4	03/27/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	8470	16.3	780	0.095	0.054	180	2.8	14	NA	57	51.7	3.1	0.050 U	0.050 U	0.64	28.4	26.9
	F97815-10	10/09/2012	0.21 U	0.24 U	0.20 U	2.0 U	0.32 U	0.31 U	0.44 U	5220	12.6 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-12B	F60665-3	10/06/2008	0.96 I	1.8	NA	1.0 U	0.22 U	0.57 I	0.70 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F64242-1	03/26/2009	0.40 U	0.35	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F68838-21	10/16/2009	0.45	0.47	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72703-3	04/06/2010	2.3	2.4	0.20 U	2.0 U	0.44 U	0.71 I	0.84 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77711-13	11/01/2010	4.4	5.2	0.20 U	2.0 U	0.25 U	0.55 I	1.4	NA	NA	NA	NA	NA	NA	0.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81422-5	04/07/2011	NA	2.4	NA	NA	0.25 U	0.88 I	0.22 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F86928-1	10/15/2011	3.2	4.5	0.20 U	2.0 U	0.25 U	0.76 I	0.94 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-11	04/03/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.33 I	0.22 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F97878-2	10/10/2012	5	5.8	0.20 U	2.0 U	0.32 U	0.31 U	1.2	1250	11.8 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-18B	F60665-5	10/06/2008	20 U	174	NA	76.4 I	21.5 I	3380	33.5 I	1260	8.7 I	585	0.42 I	3.43	NA	2.1	NA	2.1	6.8	0.050 U	0.050 U	19.2	0.050 U	9.4	NA	15.9
	F64242-2	03/26/2009	8.0 U	1640	0.20 U	39.7	4.4 U	6.4 U	48.1	2650	19.5	2650	0.62	6.52	NA	3	NA	14	30.8	13.8	0.050 U	0.050 U	0.080 I	0.18	1.0 U	84.1
	F68882-6	10/19/2009	8.0 U	1120	4.0 U	20 U	4.4 U	6.4 U	703	2720	73	5290	0.32 U	21	NA	NA	NA	12	86.6	13.6	0.050 U	0.050 U	0.14	0.25	1.0 U	134
	F72703-4	04/06/2010	0.30 I	1470	0.20 U	2.0 U	0.44 U	7.5	453	1210	25.8	6430	0.32 U	24.5	NA	NA	NA	8.3	26.2	15.5	0.050 U	0.050 U	0.050 U	1.4	13.6	8.3
	F77795-9	11/03/2010	1.0 U	333	1.0 U	10 U	1.3 U	3.4 I	904	1150	22	13200	0.32 U	138	NA	0.11	NA	NA	44.8	13.6	0.050 U	0.1	0.050 U	1.2	1.0 U	7.9
	F81422-9	04/07/2011	1.0 U	218	1.0 U	10 U	1.3 U	4.1 I	281	815	19.3	13000	0.025	100	200	0.95	6.5	NA	11.5	12	0.11	0.050 U	0.050 U	1.3	12.5	26.8
	F87208-11	10/25/2011	0.41 I	1220	0.20 U	2.0 U	0.25 U	0.26 U	1430	1100	18	9900	0.32 U	77.5	280	4.8	10	NA	40	17.2	0.13	0.050 U	0.050 U	0.42	1.0 U	10.1
	F91966-2	04/06/2012	0.20 U	104	0.20 U	2.0 U	0.25 U	1.4	313	370	23.5	9500	0.032	58	160	1.4	9	NA	17.4	12.6	0.38	0.050 U	0.050 U	0.86	16.7	8.3
	F97878-8	10/10/2012	0.23 I	347	0.20 U	2.0 U	0.32 U	1	553	953	13.5 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

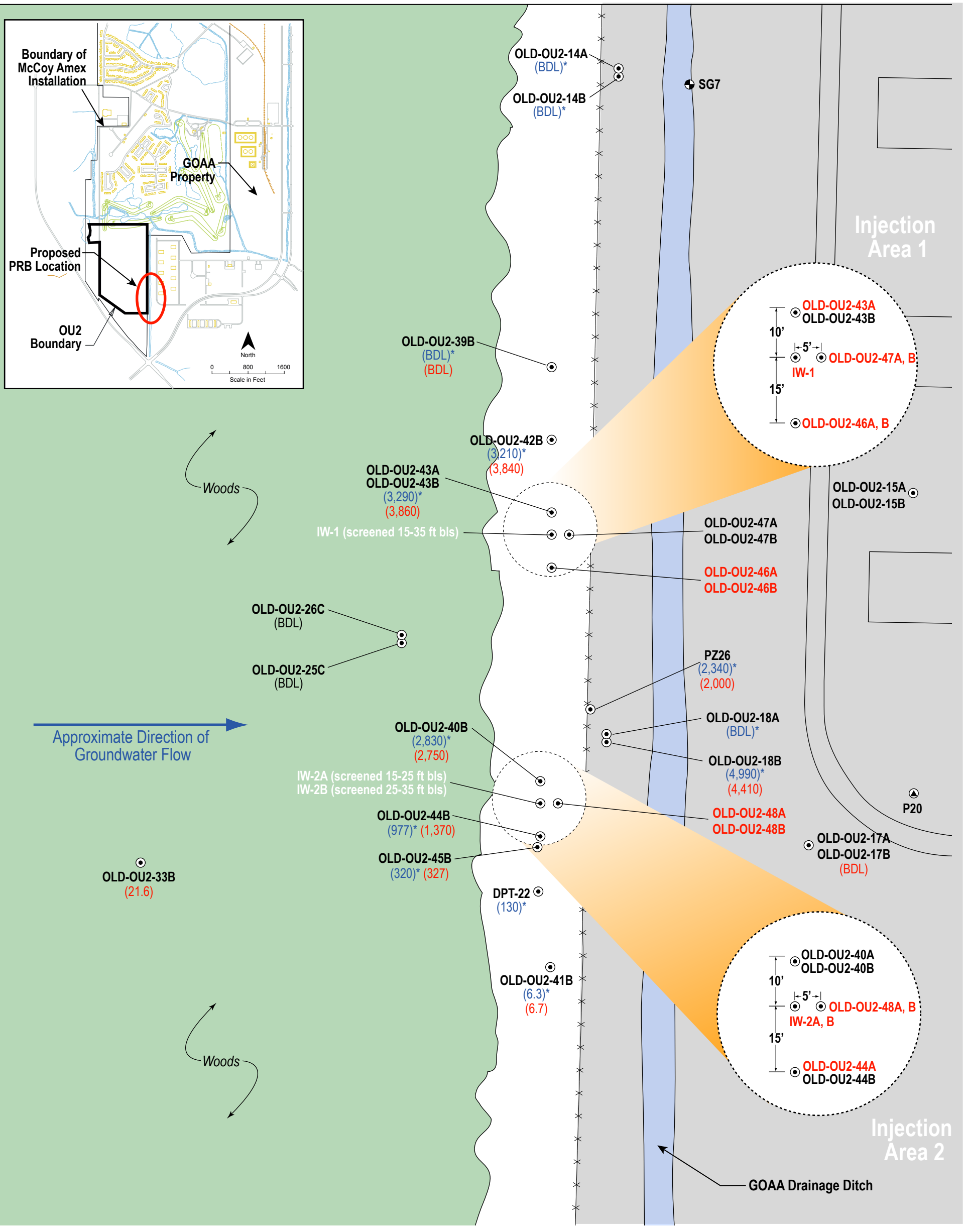
Appendix A Operable Unit 2 Analytical Results 10-2008 to 09-2012		Chemical Name	Benzene	cis-1,2-Dichloroethylene	Isopropylbenzene	Methylene chloride	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Iron	Manganese	Methane	Ethane	Ethene	Carbon Dioxide	Oxygen	Nitrogen	Hydrogen	Alkalinity, Total as CaCO3	Chloride	Nitrogen, Ammonia	Nitrogen, Nitrate	Nitrogen, Nitrite	Orthophosphate	Sulfate	Disolved Organic Carbon
		CAS-RN	71-43-2	156-59-2	98-82-8	75-09-2	127-18-4	79-01-6	75-01-4	7439-89-6	7439-96-5	74-82-8	74-84-0	74-85-1	124-38-9	7782-44-7	17778-88-0	1333-74-0	E1640192	16887-00-6	E966655	14797-55-8	14797-65-0	14265-44-2	14808-79-8	E701250
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	nM	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		GCTL	1	70	0.8	5	3	3	1	300	50	-	-	-	-	-	-	-	-	250	2.8	10	1	-	250	-
		NADSC	10	700	8	500	300	30	10	3000	500	-	-	-	-	-	-	-	-	2500	28	1000	100	-	25000	-
Well ID	Lab ID	BGSV	-	-	-	-	-	-	-	1227	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLD-OU2-21A	F60667-1	10/06/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	1310	1.0 U	NA	NA	NA	NA	1.2	NA	1.4	8.1	0.050 U	0.050 U	10.2	0.050 U	2.5 U	NA	8
	F64318-12	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	74.1 I	8.5 I	1.49	0.32 U	0.43 U	NA	4.5	NA	1.2	2.5 U	7.4	0.050 U	0.050 U	0.050 U	0.020 U	7.9	2.9
	F68838-18	10/15/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	465	1.0 U	84.4	0.32 U	0.43 U	NA	4.8	NA	2.8	2.5 U	12.7	0.050 U	0.050 U	0.050 U	0.020 U	4.6	7.6
	F72703-2	04/06/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	60.9 I	1.0 I	6.44	0.32 U	0.43 U	NA	NA	NA	3.6	2.5 U	4.2	0.050 U	0.060 I	0.050 U	0.024 I	5.8	3.3
	F77795-4	11/05/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	477	1.1 I	69.7	0.32 U	0.43 U	NA	0.76	NA	NA	2.5 U	14.9	0.050 U	0.050 U	0.050 U	0.024 I	7	7.7
	F81494-4	04/08/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	45.8 I	1.0 U	10	0.006 J	0.024 J	100	4.3	15	NA	2.5 U	8.3	0.050 U	NA	NA	NA	5.6	24.3
	F87208-5	10/25/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	457	3.4 I	36.8	0.32 U	0.43 U	59	6.1	18	NA	2.5 U	6.1	0.050 U	0.050 U	0.050 U	0.020 U	2.8	9.2
	F91966-1	04/06/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	338	1.0 U	120	0.0071	0.067	100	3.6	20	NA	2.5 U	27.8	0.050 U	0.050 U	0.050 U	0.030 I	5.5	3
OLD-OU2-21B	F60667-2	10/06/2008	0.40 U	0.98 I	NA	1.0 U	0.22 U	0.32 U	0.30 U	1160	13.8 I	1040	0.32 U	0.43 U	NA	1.3	NA	1.1	17.5	0.050 U	0.050 U	17.5	0.050 U	24.5	NA	25.3
	F64318-11	03/31/2009	0.40 U	0.88	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	1450	19.6	658	0.32 U	0.43 U	NA	3.8	NA	3.4	34.8	24.4	0.050 U	0.050 U	0.050 U	1.5	20.9	7.5
	F68838-19	10/15/2009	0.40 U	0.7	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	1510	14.2	837	0.32 U	0.43 U	NA	4.3	NA	2.8	33.2	24.6	0.1	0.050 U	0.050 U	0.25	7.1	12.5
	F72703-1	04/06/2010	0.21 U	0.76 I	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	1060	12.9 I	364	0.32 U	0.43 U	NA	NA	NA	28	30.1	24.7	0.050 U	0.050 U	0.050 U	0.15	12.4	7.9
	F77795-5	11/05/2010	0.22 I	0.53 I	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1200	15.6	564	0.32 U	0.43 U	NA	0.47	NA	NA	43.9	28.6	0.12	0.050 U	0.050 U	0.23	13.2	8.5
	F81494-2	04/08/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	876	13.7 I	710	0.093	0.027	270	1.6	11	NA	29.7	29.7	0.050 U	NA	NA	NA	21.1	11.5
	F87208-3	10/25/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	699	9.8 I	1930	0.32 U	0.43 U	230	4.9	13	NA	38.6	30.6	0.074 I	0.050 U	0.050 U	0.72	1.0 U	9.2
	F91966-4	04/06/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	853	12.8 I	2400	0.088	0.022	230	2.9	13	NA	32.4	38.3	0.050 U	0.050 U	0.050 U	0.77	1.0 U	15.9
OLD-OU2-27A	F60562-15	10/02/2008	0.40 U	0.57 I	NA	1.0 U	0.22 U	0.32 U	0.30 U	8520	922	75.2	0.32 U	0.43 U	NA	1.2	NA	1.2	21.1	0.050 U	3	49	0.050 U	42.8	NA	14.4
	F64242-18	03/27/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	5740	388	74.8	0.32 U	0.43 U	NA	7.3	NA	4.4	27.6	11.3	2.1	0.050 U	0.050 U	0.024 I	33.4	17.2
	F68838-13	10/15/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	11300	525	42.2	0.32 U	0.43 U	NA	4	NA	2.4	49	10.2	2.2	0.050 U	0.050 U	0.07	47.2	15.2
	F72702-9	04/05/2010	0.31 I	1	0.20 U	2.0 U	0.44 U	0.24 U	8.6	4530	343	399	10.7	6.39	NA	NA	NA	5.3	24.9	19.1	1.2	0.050 U	0.050 U	0.020 U	21.4	16.9
	F77934-1	11/08/2010	0.20 U	1.4	0.20 U	2.0 U	0.25 U	0.26 U	3.5	4430	285	NA	NA	NA	NA	0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-1	04/01/2011	0.42 I	3	0.20 U	2.0 U	0.25 U	0.36 I	4.3	3840	228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F86928-3	10/15/2011	0.20 U	26.4	0.20 U	2.0 U	0.25 U	16.2	0.22 U	11000	885	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-5	04/02/2012	0.20 U	3.4	0.20 U	2.0 U	0.25 U	9.2	0.50 I	3150	404	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-27B	F60562-16	10/02/2008	12	0.54 I	NA	1.0 U	0.22 U	0.32 U	0.30 U	1070	3.8 I	2570	0.39 I	0.43 U	NA	1.5	NA	1.7	15.6	0.050 U	1.1	16.4	0.050 U	6.1		28.1
	F64242-17	03/27/2009	7.4	1	0.24	1.0 U	0.22 U	0.32 U	0.30 U	888	5.0 I	1990	0.35	0.43 U	NA	3.6	NA	2.2	5.5	30.1	1.2	0.050 U	0.050 U	0.52	7.6	14.3
	F68838-12	10/15/2009	4	0.68	0.28	1.0 U	0.22 U	0.32 U	2.3	1470	4.5	838	0.46	0.73	NA	2.5	NA	2.8	7.1	21.8	1.1	0.050 U	0.050 U	0.11	26.4	14.2
	F72702-10	04/05/2010	2.8	0.58 I	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	1190	7.4 I	1290	0.32 U	0.43 U	NA	NA	NA	6	2.6 I	24.8	0.39	0.050 U	0.050 U	0.1	30.3	12.6
	F77934-2	11/08/2010	3.2	1.3	0.39 I	2.0 U	0.25 U	0.26 U	0.71 I	1490	5.4 I	NA	NA	NA	NA	0.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-2	04/01/2011	3	0.77 I	0.68 I	2.0 U	0.25 U	0.26 U	0.32 I	973	7.4 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F86928-2	10/15/2011	4.3	1.2	0.84 I	2.0 U	0.25 U	0.26 U	0.61 I	1400	5.1 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-6	04/02/2012	2.3	0.51 I	0.33 I	2.0 U	0.25 U	0.26 U	0.22 U	969	6.3 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-28B	F60499-3	10/01/2008	0.60 I	0.29 I	NA	1.0 U	0.22 U	0.32 U	0.76 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F64242-16	03/27/2009	0.40 U	0.29 I	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F68804-3	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72702-8	04/05/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77934-5	11/08/2010	0.54 I	0.44 I	0.20 U	2.0 U	0.25 U	0.26 U	2.2	NA	NA	NA	NA	NA	NA	0.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-4	04/01/2011	2.2	0.86 I	0.20 U	2.0 U	0.25 U	0.26 U	2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87147-7	10/24/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-2	03/29/2012	2.6	0.85 I	0.20 U	2.0 U	0.25 U	0.26 U	3.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-29A	F60562-9	10/03/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	6350	4.9 I	127	0.32 U	0.43 U	NA	0.38	NA	1.2	37.3	0.050 U	0.24	35.6	0.050 U	12.9	NA	32.8
	F64318-2	03/30/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	5240	3.7 I	187	0.32 U	0.43 U	NA	4	NA	8	5.3	22.4	0.25	0.050 U	0.050 U	0.42	13.7	12.2
	F68838-14	10/15/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	1990	3.5	40.9	0.32 U	0.43 U	NA	3.3	NA	2.7	29	13.7	0.050 U	0.1	0.050 U	0.020 U	12.4	18
	F72632-16	04/01/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	4790	3.6 I	75	0.32 U	0.43 U	NA	NA	NA	2.3	8.9	21.9	0.26	0.1	0.050 U	0.27	30.3	25.3
	F77624-5	10/28/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	3970	3.5 I	84	0.32 U	0.43 U	NA	0.39	NA	NA	15.7	14.5	0.21	0.050 U	0.050 U	0.071 I	13.9	22.7
	F81361-2	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1960	2.8 I	82	0.025 U	0.024 J	81	3.4	18	NA	23.1	11.5	0.050 U	0.094 I	0.050 U	0.63	11.2	14
	F87053-2	10/20/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	3230	5.5 I	85.3	0.32 U	0.43 U	100	5.5	18	NA	13.7	15.9	0.21	0.19	0.050 U	0.22	13.7	21.6
	F91634-5	03/28/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1090	2.7 I	28.8	0.32 U	0.43 U	58	4	20	NA	34.7	5.7	0.050 U	0.11	0.050 U	0.17	10.7	29.5
OLD-OU2-29B	F60562-10	10/03/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	3470	11.2 I	311	0.32 U	0.43 U	NA	2.7	NA	1.8	9.3	0.050 U	0.17	10	0.050 U	13.9	NA	18.1
	F64318-13	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	2290	6.9 I	475	0.32 U	0.43 U	NA	0.13	NA	0.73	20.3	15.6	0.085 I	0.050 U	0.050 U	5.6	1.6 I	4.7
	F68838-3	10/16/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	3470	13	376	0.32 U	0.43 U	NA	2.1	NA	26	22.4	12.5	0.27	0.050 U	0.050 U	4.6	1.0 U	7
	F72632-15	04/01/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	2120	5.6 I	385	0.32 U	0.43 U	NA	NA	NA	3.2	23.2	16.9	0.17	0.050 U	0.050 U	1.4	1.5 I	5.1
	F77624-6	10/28/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1890	8.2 I	634	0.32 U	0.43 U	NA	0.32	NA	NA	18.6	16	0.3	0.050 U	0.050 U	2.3	1.3 I	5.7
	F81361-4	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2260	10.7 I	800	0.23	0.03	95	1.8	14	NA	21.3	17.1	0.3	0.050 U	0.050 U	1.3	1.0 U	10.4
	F87053-4	10/20/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2510	10.0 I	396	0.32 U	0.43 U	99	5.4	18	NA	17	16.1	0.14	0.050 U	0.050 U	1.7	1.0 U	10.9
	F91634-11	03/28/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2170	14.3 I	1180	0.46 I	0.43 U	83	2.3	16	NA	30.5	17.6	0.42	0.050 U	0.050 U	1.8	1.3 I	23.3

Appendix A Operable Unit 2 Analytical Results 10-2008 to 09-2012		Chemical Name	Benzene	cis-1,2-Dichloroethylene	Isopropylbenzene	Methylene chloride	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Iron	Manganese	Methane	Ethane	Ethene	Carbon Dioxide	Oxygen	Nitrogen	Hydrogen	Alkalinity, Total as CaCO3	Chloride	Nitrogen, Ammonia	Nitrogen, Nitrate	Nitrogen, Nitrite	Orthophosphate	Sulfate	Disolved Organic Carbon
		CAS-RN	71-43-2	156-59-2	98-82-8	75-09-2	127-18-4	79-01-6	75-01-4	7439-89-6	7439-96-5	74-82-8	74-84-0	74-85-1	124-38-9	7782-44-7	17778-88-0	1333-74-0	E1640192	16887-00-6	E966655	14797-55-8	14797-65-0	14265-44-2	14808-79-8	E701250
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	nM	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		GCTL	1	70	0.8	5	3	3	1	300	50	-	-	-	-	-	-	-	-	250	2.8	10	1	-	250	-
		NADSC	10	700	8	500	300	30	10	3000	500	-	-	-	-	-	-	-	-	2500	28	1000	100	-	25000	-
Well ID	Lab ID	BGSV	-	-	-	-	-	-	-	1227	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLD-OU2-30A	F60562-11	10/03/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	11400	50.8	722	0.32 U	0.43 U	NA	0.020 U	NA	3.3	52.3	0.050 U	0.67	9.4	0.050 U	59.3	NA	6.5
	F64318-14	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	24200	47.7	105	0.32 U	0.43 U	NA	NA	NA	NA	48.3	19.3	0.58	0.050 U	0.050 U	3.1 I	1.6 I	32
	F68882-4	10/19/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	6860	19.6	1240	0.32 U	0.43 U	NA	NA	NA	2.6	52.3	6.8	0.35	0.13	0.050 U	0.020 U	1.0 U	40
	F72652-3	04/02/2010	0.35 I	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	38500	171	4050	0.32 U	0.43 U	NA	NA	NA	9.8	89.4	8.9	4.1	0.050 U	0.050 U	0.078 I	1.2 I	37.1
	F77624-7	10/28/2010	0.26 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	16600	86.1	NA	NA	NA	NA	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81361-7	04/06/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	9240	26.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-2	10/25/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	7930	26.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91634-13	03/28/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	10600	25.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-30B	F60562-12	10/03/2008	0.45 I	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	21300	121	1660	0.32 U	0.43 U	NA	0.21	NA	1.5	47.9	0.050 U	2.1	8.6	0.050 U	163	NA	30.2
	F64318-15	03/31/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	31100	134	3680	0.32 U	0.43 U	NA	4.3	NA	1.1	241	63.5	2.8	0.050 U	0.050 U	0.020 U	3.5	43.9
	F68882-5	10/19/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	30700	138	1730	0.32 U	0.43 U	NA	NA	NA	1.8	236	40.3	2.2	0.12	0.050 U	0.046	1.7	40.5
	F72702-5	04/05/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	13100	72.8	1360	0.32 U	0.43 U	NA	NA	NA	6.6	167	19.9	1.3	0.050 U	0.050 U	0.020 U	4.3	30.3
	F77624-8	10/28/2010	0.39 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	24100	106	NA	NA	NA	NA	0.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81361-8	04/06/2011	0.36 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	22300	82.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-1	10/25/2011	0.25 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	20800	109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91634-12	03/28/2012	0.46 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	29700	133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-31A	F60562-7	10/03/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	228 I	2.5 I	8.07	0.32 U	0.43 U	NA	0.020 U	NA	0.98	6.1	0.050 U	0.050 U	11.2	0.1	19.7	NA	5.9
	F64242-14	03/27/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	382	3.7 I	5.97	0.32 U	0.43 U	NA	5	NA	1	2.5 U	4.5	0.050 U	0.1	0.050 U	0.046 I	4.9	3
	F68804-5	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	580	2.8	8.72	0.32 U	0.43 U	NA	7.3	NA	2.1	2.5 U	4.3	0.050 U	0.050 U	0.050 U	0.029	4.1	NA
	F72652-5	04/02/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	302	6.7 I	0.25 I	0.32 U	0.43 U	NA	NA	NA	5.6	2.8 I	4.6	0.050 U	0.080 I	0.050 U	0.15	4.6	6.9
	F77795-6	11/05/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1030	6.7 I	44	0.32 U	0.43 U	NA	0.31	NA	NA	2.5 U	2.4	0.050 U	0.050 U	0.050 U	0.030 I	5.6	10.6
	F81494-1	04/08/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	105 I	5.6 I	30	0.025 U	0.031	71	2.7	17	NA	2.5 U	3.7	0.050 U	NA	NA	NA	5.2	6.1
	F87147-6	10/24/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	190 I	1.7 I	0.7	0.32 U	0.43 U	32	8.9	19	NA	2.7 I	3.2	0.050 U	0.050 U	0.050 U	0.020 U	3.9	8.5
	F91853-7	04/03/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	464	3.2 I	44.3	0.32 U	0.43 U	36	3.9	17	NA	2.5 U	5.5	0.050 U	0.050 U	0.050 U	0.023 I	9.9	4.7
	F97878-3	10/10/2012	0.21 U	0.24 U	0.20 U	2.0 U	0.32 U	0.31 U	0.44 U	42.5 I	2.7 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-31B	F60562-8	10/03/2008	20.6	5.9		1.0 U	4.7	3.4	6.4	2030	7.2 I	1190	0.60 I	0.45 I	NA	1.1	NA	1.5	12.4	0.050 U	0.050 I	29.4	0.050 U	9.2	NA	19.9
	F64242-15	03/27/2009	27.3	2.7	0.20 U	1.0 U	2.6	1.4	4.2	1830	6.5 I	2590	1.1	0.59	NA	3.7	NA	1.2	3.3 I	22.7	0.050 U	0.1	0.050 U	2.6	11.8	9.7
	F68804-4	10/14/2009	33.5	2.1	0.36	1.0 U	3.1	1.1	4.4	1720	6.2	1910	1.5	0.43 U	NA	3.3	NA	2.6	10	25.3	0.050U	0.050 U	0.050 U	1.4	8.2	NA
	F72652-4	04/02/2010	27.6	1.6	0.24 I	2.0 U	2.4	1	3.3	1690	6.3 I	1770	1.2	0.43 U	NA	NA	NA	3.6	3.8 I	26.8	0.050 U	0.050 U	0.050 U	1.2	11.8	10.4
	F77795-7	11/05/2010	29	1.5	0.54 I	2.0 U	2.8	0.60 I	2.1	1820	6.6 I	1730	1	2.1	NA	0.56	NA	NA	8.4	26.7	0.050 U	0.050 U	0.050 U	0.2	15.7	10
	F81494-3	04/08/2011	27.9	1.7	0.69 I	2.0 U	3.5	0.80 I	2.2	1690	6.6 I	2300	1.3	0.29	410	1.3	9.9	NA	5	25.1	0.050 U	NA	NA	NA	17.4	24.2
	F87147-4	10/24/2011	15.1	1.5	0.43 I	2.0 U	3.1	0.62 I	1.3	1750	7.4 I	1100	0.79 I	0	290	6.2	15	NA	8.1	22	0.076 I	0.050 U	0.050 U	0.76	27.2	16.1
	F91853-10	04/03/2012	13.9	1.3	0.20 U	2.0 U	1.7	0.50 I	1.9	932	7.9 I	1080	0.77 I	0.43 U	320	3.6	15	NA	8.8	20.8	0.050 U	0.050 U	0.050 U	1.1	28.8	19.2
	F97878-5	10/10/2012	13.4	1.2	0.24 I	2.0 U	1.6	0.37 I	1.1	1780	6.2 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-32A	F60499-1	10/01/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	105 I	1.0 U	1.7	0.32 U	0.43 U	NA	4	NA	2.2	10.9	5.1	0.050 U	0.14	0.050 U	0.040 U	8.7	22.3
	F64242-10	03/26/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	289 I	2.5 I	214	0.32 U	0.43 U	NA	7.8	NA	0.8	3.4 I	5	0.050 U	0.12	0.050 U	0.020 U	7.1	18.8
	F68804-2	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	296	1.2	77	0.32 U	0.43 U	NA	3.4	NA	2.3	2.5 U	4.3	0.050 U	0.050 U	0.050 U	0.020 U	4	NA
	F72652-6	04/02/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	248 I	1.0 I	0.25 I	0.32 U	0.43 U	NA	NA	NA	6.3	3.3 I	3.1	0.050 U	0.11	0.050 U	0.58	3	18
	F77934-3	11/08/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	674	1.9 I	NA	NA	NA	NA	1.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-7	04/01/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	66.2 I	2.1 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-7	10/25/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	288 I	1.0 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-4	03/29/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	150 I	2.0 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-32B	F64242-11	03/26/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	921	7.2 I	339	0.32 U	0.43 U	NA	2.7	NA	3	10.3	9.3	0.050 U	0.11	0.050 U	3.3	1.5 I	4.7
	F68804-1	10/14/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	973	7.5	174	0.32 U	0.43 U	NA	2.9	NA	2.8	15.1	6.6	0.050U	0.050 U	0.050 U	0.23	3.2	NA
	F72702-7	04/05/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	1120	9.1 I	191	3.12	3.67	NA	NA	NA	8.3	5.6	5.8	0.050 U	0.060 I	0.050 U	2.3	14.7	4.8
	F77934-4	11/08/2010	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1300	10.3 I	NA	NA	NA	NA	0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-8	04/01/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1240	10.4 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-6	10/25/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1250	9.7 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-3	03/29/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1210	10.4 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-33A	F60668-2	10/07/2008	0.40 U	0.20 U	NA	1.0 U	0.22 U	0.32 U	0.30 U	1100	6.9 I	2.58	0.32 U	0.43 U	NA	4.4	NA	1.1	7.5	0.050 U	0.050 U	14.1	2.1	2.5 U	NA	11.7
	F64242-13	03/27/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.30 U	2160	10.0 I	560	0.32 U	0.43 U	NA	0.13	NA	0.73	2.5 U	16.6	0.050 U	0.050 U	0.050 U	0.020 U	7.5	9
	F68882-7	10/19/2009	0.40 U	0.41	0.20 U	1.0 U	0.22 U	0.43	0.30 U	926	3.7	127	0.32 U	0.43 U	NA	NA	NA	11	2.5 U	6.8	0.050 U	0.11	0.050 U	0.020 U	8.3	8.7
	F72632-1	04/01/2010	0.21 U	0.32 U	0.20 U	2.0 U	0.44 U	0.24 U	0.28 U	226 I	3.5 I	0.47 I	0.32 U	0.43 U	NA	NA	NA	5.5	2.5 U	6.3	0.050 U	4.3	0.050 U	0.038 I	12.3	6.5
	F77795-11	11/03/2010	0.48 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1310	9.6 I	NA	NA	NA	NA	3.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-3	04/01/2011	0.54 I	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	1800	9.2 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F86928-4	10/15/2011	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	346	2.7 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91967-1	04/05/2012	0.20 U	0.26 U	0.20 U	2.0 U	0.25 U	0.26 U	0.22 U	2230	7.8 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix A Operable Unit 2 Analytical Results 10-2008 to 09-2012		Chemical Name	Benzene	cis-1,2-Dichloroethylene	Isopropylbenzene	Methylene chloride	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Iron	Manganese	Methane	Ethane	Ethene	Carbon Dioxide	Oxygen	Nitrogen	Hydrogen	Alkalinity, Total as CaCO3	Chloride	Nitrogen, Ammonia	Nitrogen, Nitrate	Nitrogen, Nitrite	Orthophosphate	Sulfate	Disolved Organic Carbon
		CAS-RN	71-43-2	156-59-2	98-82-8	75-09-2	127-18-4	79-01-6	75-01-4	7439-89-6	7439-96-5	74-82-8	74-84-0	74-85-1	124-38-9	7782-44-7	17778-88-0	1333-74-0	E1640192	16887-00-6	E966655	14797-55-8	14797-65-0	14265-44-2	14808-79-8	E701250
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	nM	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		GCTL	1	70	0.8	5	3	3	1	300	50	-	-	-	-	-	-	-	-	250	2.8	10	1	-	250	-
		NADSC	10	700	8	500	300	30	10	3000	500	-	-	-	-	-	-	-	-	2500	28	1000	100	-	25000	-
Well ID	Lab ID	BGSV	-	-	-	-	-	-	-	1227	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLD-OU2-33B	F60668-1	10/07/2008	0.40 U	1.8	NA	1.0 U	0.54 I	10.8	0.30 U	1850	8.7 I	166	0.32 U	0.43 U	NA	2.3	NA	1.1	10.7	0.050 U	0.050 U	32.6	0.050 U	2.9 I	NA	16.1
	F64242-12	03/27/2009	0.40 U	1.1	0.20 U	1.0 U	0.69	16.5	0.30 U	1810	12.1 I	314	0.32 U	0.43 U	NA	3.8	NA	1.1	2.5 I	13.4	0.051 I	0.050 U	0.050 U	0.66	22.5	5.5
	F68882-8	10/19/2009	0.40 U	0.99	0.20 U	1.0 U	0.37	7.6	0.37	1770	9	110	0.32 U	0.43 U	NA	NA	NA	16	7.2	12.3	0.1	0.050 U	0.050 U	0.22	27.6	6.2
	F72632-2	04/01/2010	0.21 U	0.49 I	0.20 U	2.0 U	0.50 I	8.9	0.28 U	1660	17.5	72.6	0.32 U	0.43 U	NA	NA	NA	3.9	5	12	0.15	0.050 U	0.050 U	0.34	29.9	5.8
	F77795-12	11/03/2010	0.20 U	1.2	0.20 U	2.0 U	0.43 I	8.3	0.22 U	1840	12.3 I	NA	NA	NA	NA	0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-5	04/01/2011	0.20 U	0.38 I	0.20 U	2.0 U	0.59 I	12.3	0.22 U	1460	9.0 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F86928-5	10/15/2011	0.20 U	0.31 I	0.20 U	2.0 U	0.59 I	11.2	0.22 U	1510	6.5 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91967-2	04/05/2012	0.20 U	0.85 I	0.20 U	2.0 U	0.70 I	11.3	0.22 U	1650	7.4 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-37B	F60562-13	10/03/2008	1.2	1.3	NA	1.0 U	0.22 U	0.32 U	1.5	NA	NA	2120	0.36 I	0.51 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F64318-1	03/30/2009	1.2	1.8	0.20 U	1.0 U	0.22 U	0.32 U	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F68838-1	10/16/2009	0.99	1	0.20 U	1.0 U	0.22 U	0.32 U	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72702-6	04/05/2010	1.2	1.4	0.20 U	2.0 U	0.44 U	0.24 U	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77934-6	11/08/2010	0.76 I	0.78 I	0.20 U	2.0 U	0.25 U	0.26 U	0.59 I	NA	NA	NA	NA	NA	NA	0.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81309-6	04/01/2011	1.5	1.2	0.20 U	2.0 U	0.25 U	0.26 U	0.90 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-4	10/25/2011	0.90 I	0.75 I	0.20 U	2.0 U	0.25 U	0.26 U	0.50 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-1	03/29/2012	0.79 I	0.45 I	0.20 U	2.0 U	0.25 U	0.26 U	0.56 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F97815-11	10/09/2012	0.58 I	0.47 I	0.23 I	2.0 U	0.32 U	0.31 U	0.44 U	1810	4.1 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-41B	F68882-11	10/19/2009	2.1	2.1	0.20 U	1.0 U	0.27	42.7	1.7	1010	7.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-3	04/01/2010	1.7	2.3	0.20 U	2.0 U	0.66 I	56	1	604	7.9 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77795-3	11/04/2010	2	2.4	0.20 U	2.0 U	0.31 I	34.3	1.2	NA	NA	1620	0.32 U	1.1	NA	0.48	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	6.8
	F81308-5	04/04/2011	1.8	2.5	0.20 U	2.0 U	0.41 I	47.6	0.99 I	NA	NA	500	0.01 J	0.25	130	4.7	12	NA	NA	NA	NA	NA	NA	NA	8.5	5.3
	F87147-1	10/24/2011	2.5	4.6	0.20 U	2.0 U	0.68 I	64.7	1.3	NA	NA	1500	0.32 U	0.43 U	200	3.9	17	NA	NA	NA	NA	NA	NA	NA	NA	2.7	8.9
	F91968-1	04/09/2012	1.9	2.7	0.20 U	2.0 U	0.25 U	24.9	0.22 U	NA	NA	1700	0.078	0.28	180	2.8	14	NA	NA	NA	NA	NA	NA	NA	NA	1.0 I	10.8
	F97878-7	10/10/2012	2.1	19.7	0.20 U	2.0 U	0.66 I	58.4	1.2	925	13.4 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-42B	F68882-2	10/19/2009	20 U	413	10 U	50 U	11 U	3780	54.9	879	6.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-4	04/01/2010	11 U	440	10 U	100 U	22 U	3620	32.0 I	737	6.3 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77711-1	11/01/2010	10 U	599	10 U	100 U	13 U	3020	30.6 I	NA	NA	1440	0.32 U	3.89	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	7.4
	F81422-1	04/07/2011	4.0 U	454	4.0 U	40 U	5.0 U	1620	9.8 I	NA	NA	1100	0.17	2.7	160	2	14	NA	NA	NA	NA	NA	NA	NA	NA	2.1	6.4
	F87077-1	10/21/2011	10 U	627	10 U	100 U	13 U	2690	11 U	NA	NA	1290	0.37 I	4.02	170	6.7	17	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	6.7
	F91966-5	04/06/2012	0.59 I	661	0.20 U	2.0 U	2.5	3530	29.6	NA	NA	2200	0.43	7.3	200	2.6	16	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	12.2
	F97879-1	10/11/2012	4.2 U	691	4.0 U	40 U	6.4 U	1960	19.7 I	320	6.3 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-43B	F68882-3	10/19/2009	20 U	123	10 U	50 U	35.4	4470	49	982	7.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-5	04/01/2010	11 U	143	10 U	100 U	46.0 I	5300	33.5 I	819	6.6 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77711-2	11/01/2010	20 U	236	20 U	232 I	54.5 I	7540	22 U	NA	NA	794	0.49 I	6.79	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.7	7.7
	F81422-2	04/07/2011	20 U	168	20 U	200 U	47.7 I	5370	22 U	NA	NA	840	0.43	6.3	180	1.7	14	NA	NA	NA	NA	NA	NA	NA	NA	20.5	24.8
	F87077-3	10/21/2011	20 U	154	20 U	200 U	40.8 I	4960	22 U	NA	NA	769	0.40 I	5.1	190	5.8	15	NA	NA	NA	NA	NA	NA	NA	NA	21	12.2
	F91968-2	04/09/2012	0.25 I	291	0.20 U	2.0 U	29.7	5150	36.9	NA	NA	850	0.57	8.8	180	5.1	14	NA	NA	NA	NA	NA	NA	NA	NA	20.2	8.4
	F97879-2	10/11/2012	21 U	286	20 U	200 U	41.7 I	6580	44 U	822	6.2 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-44B	F77795-2	11/04/2010	2.0 U	142	2.0 U	23.4 I	13	1590	12.3	NA	NA	1660	0.32 U	2.2	NA	0.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.6	6.9
	F81308-2	04/04/2011	4.0 U	1610	4.0 U	40 U	6.0 I	771	15.8 I	NA	NA	1600	0.018 J	0.72	97	3.9	9.5	NA	NA	NA	NA	NA	NA	NA	NA	12.9	5.6
	F87147-5	10/24/2011	4.0 U	1080	4.0 U	40 U	5.0 U	453	8.9 I	NA	NA	5950	0.32 U	1.9	200	4.4	12	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	9.6
	F92066-1	04/10/2012	4.0 U	436	4.0 U	40 U	5.7 I	1030	11.7 I	NA	NA	1400	0.13	1.2	100	4.4	12	NA	NA	NA	NA	NA	NA	NA	NA	11.2	6.8
	F97878-10	10/10/2012	4.2 U	1530	4.0 U	40 U	6.4 U	51.5	353	909	6.3 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-45B	F77711-3	11/01/2010	2.0 U	715	2.0 U	30.6 I	2.5 U	174	2.2 U	NA	NA	5670	0.45 I	3.17	NA	0.34	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	6.1
	F81308-3	04/04/2011	2.0 U	852	2.0 U	20 U	2.5 U	58.2	7.2 I	NA	NA	4500	0.044	0.98	220	3.1	8.9	NA	NA	NA	NA	NA	NA	NA	NA	7.2	6.3
	F87147-3	10/24/2011	2.0 U	594	2.0 U	20 U	2.5 U	5.1 I	6.9 I	NA	NA	8550	0.32 U	0.43 U	260	5	14	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	10.7
	F91968-4	04/09/2012	0.92 I	708	0.20 U	2.0 U	0.25 U	2.2	7.3	NA	NA	13000	0.025 U	1.5	240	1.4	9.3	NA	NA	NA	NA	NA	NA	NA	NA	1.1 I	14.2
OLD-OU2-46B	F77795-14	11/03/2010	10 U	1650	10 U	102 I	17.3 I	4250	64.9	NA	NA	1620	0.71 I	8.18	NA	0.38	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.9	11
	F81308-6	04/04/2011	10 U	1550	10 U	100 U	16.7 I	3840	31.8 I	NA	NA	1500	0.36	5	140	2	12	NA	NA	NA	NA	NA	NA	NA	NA	10.5	25.8
	F87147-2	10/24/2011	20 U	826	20 U	200 U	35.6 I	4410	22 U	NA	NA	1740	0.60 I	6.35	110	9.4	18	NA	NA	NA	NA	NA	NA	NA	NA	12.2	6.6
	F91968-5	04/09/2012	0.26 I	913	0.20 U	2.0 U	36.2	5020	47.6	NA	NA	1300	0.64	8.6	140	5	16	NA	NA	NA	NA	NA	NA	NA	NA	11.5	8.7
OLD-OU2-47B	F77795-15	11/03/2010	10 U	141	10 U	20 U	37.0 I	4140	32.7 I	NA	NA	839	0.49 I	6.76	NA	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	27	7
	F81422-4	04/07/2011	10 U	179	10 U	100 U	33.3 I	3810	12.5 I	NA	NA	380	0.056	0.66	170	1.6	14	NA	NA	NA	NA	NA	NA	NA	NA	19.9	28.2
	F87077-5	10/21/2011	20 U	210	20 U	200 U	47.2 I	6110	22 U	NA	NA	763	0.36 I	4.5	160	6.4	16	NA	NA	NA	NA	NA	NA	NA	NA	9.4	12
	F91968-3	04/09/2012	0.20 U	169	0.20 U	2.0 U	39.7	2830	25.9	NA	NA	750	0.42	5.7	150	5.2	15	NA	NA	NA	NA	NA	NA	NA	NA	27.1	12
	F97879-3	10/11/2012	11 U	149	10 U	100 U	40.3 I	3620	27.8 I	1020	8.6 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix A Operable Unit 2 Analytical Results 10-2008 to 09-2012		Chemical Name	Benzene	cis-1,2-Dichloroethylene	Isopropylbenzene	Methylene chloride	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Iron	Manganese	Methane	Ethane	Ethene	Carbon Dioxide	Oxygen	Nitrogen	Hydrogen	Alkalinity, Total as CaCO3	Chloride	Nitrogen, Ammonia	Nitrogen, Nitrate	Nitrogen, Nitrite	Orthophosphate	Sulfate	Disolved Organic Carbon
		CAS-RN	71-43-2	156-59-2	98-82-8	75-09-2	127-18-4	79-01-6	75-01-4	7439-89-6	7439-96-5	74-82-8	74-84-0	74-85-1	124-38-9	7782-44-7	17778-88-0	1333-74-0	E1640192	16887-00-6	E966655	14797-55-8	14797-65-0	14265-44-2	14808-79-8	E701250
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	nM	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		GCTL	1	70	0.8	5	3	3	1	300	50	-	-	-	-	-	-	-	-	250	2.8	10	1	-	250	-
		NADSC	10	700	8	500	300	30	10	3000	500	-	-	-	-	-	-	-	-	2500	28	1000	100	-	25000	-
Well ID	Lab ID	BGSV	-	-	-	-	-	-	-	1227	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLD-OU2-48B	F77795-1	11/04/2010	2.0 U	1730	2.0 U	113 I	2.5 U	2.6 U	20.6	NA	NA	8460	0.32 U	3.94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	22.5
	F81308-1	04/04/2011	4.0 U	1810	4.0 U	40 U	5.0 U	5.2 U	17.8 I	NA	NA	15000	0.12	2.3	290	1.4	6.4	NA	NA	NA	NA	NA	NA	NA	6.9	16.8
	F87077-6	10/21/2011	4.0 U	2400	4.0 U	40 U	5.0 U	5.2 U	28.6	NA	NA	6890	0.32 U	0.93 I	330	3.7	8.4	NA	NA	NA	NA	NA	NA	NA	1.0 U	9.6
	F91968-6	04/09/2012	0.79 I	1010	0.20 U	2.0 U	0.25 U	1.1	543	NA	NA	18000	0.025 U	36	300	1.7	6.6	NA	NA	NA	NA	NA	NA	NA	1.0 U	26.2
OLD-OU2-49B	F77795-17	11/03/2010	0.20 U	1.8	0.20 U	2.0 U	1.5	35.6	0.53 I	NA	NA	141	0.32 U	0.43 U	NA	0.52	NA	NA	NA	NA	NA	NA	NA	NA	18.8	8.3
	F81422-7	04/07/2011	0.21 I	10.6	0.20 U	2.0 U	5.5	178	1.4	NA	NA	320	0.14	1.9	110	3.6	14	NA	NA	NA	NA	NA	NA	NA	21.4	25
	F87077-4	10/21/2011	0.20 U	4.8	0.20 U	2.0 U	1.2	33.7	0.22 U	NA	NA	98.4	0.32 U	0.65 I	79	7.3	18	NA	NA	NA	NA	NA	NA	NA	9.8	53.1
	F91968-7	04/09/2012	0.22 I	53.5	0.20 U	2.0 U	3.2	61.8	3.4	NA	NA	300	0.057	1.6	130	4.9	18	NA	NA	NA	NA	NA	NA	NA	17.1	25.3
OLD-OU2-50B	F68882-13	10/19/2009	2.0 U	632	1.0 U	12.4	1.1 U	2.3	8.5	3350	20.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-6	04/01/2010	2.1 I	375	1.0 U	10 U	2.2 U	1.2 U	4.5 I	1310	6.1 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77795-18	11/03/2010	1.0 U	293	1.0 U	10 U	1.3 U	2.8 I	5.7	NA	NA	10100	0.32 U	2	NA	1.21	NA	NA	NA	NA	NA	NA	NA	NA	6.9	8.4
	F81308-4	04/04/2011	2.0 U	648	2.0 U	20 U	2.5 U	4.8 I	6.5 I	NA	NA	12000	0.12	2.2	230	1.7	9.5	NA	NA	NA	NA	NA	NA	NA	19.2	24.8
	F87077-2	10/21/2011	0.20 U	212	0.20 U	2.0 U	0.25 U	1.3	5.4	NA	NA	4620	0.32 U	0.72 I	120	4.7	15	NA	NA	NA	NA	NA	NA	NA	1.0 U	29.6
	F92066-3	04/10/2012	0.22 I	40.6	0.20 U	2.0 U	0.25 U	0.27 I	80.5	NA	NA	9400	0.1	8.8	120	7.8	15	NA	NA	NA	NA	NA	NA	NA	18.7	
OLD-OU2-51B	F68838-22	10/16/2009	2.0 U	257	1.0 U	7.8	1.1 U	1.6 U	4	2140	10.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-13	04/01/2010	1.1 U	218	1.0 U	10 U	2.2 U	1.2 U	3.5 I	1270	5.9 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77795-10	11/03/2010	1.0 U	277	1.0 U	10 U	1.3 U	1.3 U	7.9	NA	NA	11900	0.32 U	2.2	NA	0.12	NA	NA	NA	NA	NA	NA	NA	NA	2.5	6.6
	F81422-10	04/07/2011	0.40 U	168	0.40 U	4.0 U	0.50 U	0.56 I	7	NA	NA	17000	0.14	3.4	290	1.1	5.3	NA	NA	NA	NA	NA	NA	NA	1.3 I	23.6
	F87208-9	10/25/2011	0.20 U	99.2	0.20 U	2.0 U	0.25 U	11	2.7	NA	NA	10300	0.32 U	0.43 U	230	2.8	6.7	NA	NA	NA	NA	NA	NA	NA	3.3	11
	F91966-3	04/06/2012	0.20 U	108	0.20 U	2.0 U	0.25 U	0.26 U	12.5	NA	NA	14000	0.15	2.9	150	2.5	9.2	NA	NA	NA	NA	NA	NA	NA	1.0 U	11.4
	F97878-6	10/10/2012	0.21 U	107	0.20 U	2.0 U	0.32 U	0.31 U	33.4	1040	4.8 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-53B	F68882-12	10/19/2009	0.80 U	166	0.40 U	2.0 U	2.4	70.2	2.3	694	5.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-7	04/01/2010	0.42 U	388	0.40 U	4.0 U	3	51.2	4.2	798	5.9 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77795-8	11/05/2010	2.0 U	797	2.0 U	20 U	10.2	371	60.8	NA	NA	4610	0.32 U	11.6	NA	0.43	NA	NA	NA	NA	NA	NA	NA	NA	8.2	7.7
	F81308-7	04/04/2011	2.0 U	614	2.0 U	20 U	2.5 U	6.0 I	293	NA	NA	4300	0.025 J	12	170	2.8	8.2	NA	NA	NA	NA	NA	NA	NA	7.7	7.2
	F92066-2	04/10/2012	1.0 U	316	1.0 U	10 U	2.7 I	39.8	237	NA	NA	6800	0.06	23	180	6	15	NA	NA	NA	NA	NA	NA	NA	20.7	17
OLD-OU2-DP01A	F60665-2	10/06/2008	1.8	1.2	NA	1.0 U	0.22 U	0.32 U	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F64242-3	03/26/2009	0.40 U	0.20 U	0.20 U	1.0 U	0.22 U	0.32 U	0.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F68838-20	10/16/2009	1.5	1.1	0.20 U	1.0 U	0.22 U	0.32 U	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F72632-12	04/01/2010	1.1	1.1	0.20 U	2.0 U	0.44 U	1.9	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F77795-13	11/03/2010	0.69 I	0.60 I	0.20 U	2.0 U	0.25 U	0.33 I	1	NA	NA	NA	NA	NA	NA	4.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F81422-8	04/07/2011	3.1	2	0.20 U	2.0 U	0.25 U	0.26 U	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F87208-8	10/25/2011	2.1	1.5	0.20 U	2.0 U	0.25 U	0.26 U	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F91853-12	04/03/2012	1.7	1.5	0.20 U	2.0 U	0.25 U	0.26 U	3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F97878-4	10/10/2012	0.21 U	0.24 U	0.20 U	2.0 U	0.32 U	0.31 U	0.44 U	553	6.5 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-DP02A	F60665-1	10/06/2008	0.40 U	21.6	NA	1.0 U	0.35 I	4.4	0.42 I	3130	3.1 I	38.5	0.32 U	0.43 U	NA	5.3	NA	1.3	11.7	0.050 U	0.050 U	26	0.050 U	2.5 U	NA	42.4
	F64242-4	03/26/2009	0.40 U	218	0.20 U	1.0 U	0.22 U	35.1	3.7	1950	1.9 I	429	0.32 U	0.43 U	NA	8.1	NA	1.3	43.9	23.5	0.050 U	0.050 U	0.050 U	0.038 I	14.7	4.7
	F68882-9	10/19/2009	0.40 U	135	0.20 U	1.0 U	0.22 U	15.1	2.2	1230	1.4	173	0.32 U	0.43 U	NA	NA	NA	7.2	42.1	21.8	0.068	0.050 U	0.050 U	0.022	13.5	5.9
	F72632-14	04/01/2010	1.1 U	475	1.0 U	10 U	2.2 U	5.2	4.3 I	1990	1.2 I	3780	0.32 U	0.43 U	NA	NA	NA	4.4	14.1	15.6	0.050 U	0.050 U	0.050 U	0.13	2.6	10.3
	F77795-16	11/03/2010	1.0 U	301	1.0 U	10 U	1.3 U	1.9 I	8.7	1130	1.0 I	1780	0.32 U	0.43 U	NA	2.99	NA	NA	2.7 I	29.5	0.050 U	0.089 I	0.050 U	0.22	10.9	7
	F81422-11	04/07/2011	1.0 U	242	1.0 U	10 U	1.3 U	20.5	2.7 I	523	1.0 U	2100	0.025	0.14	150	2	15	NA	6.7	18.8	0.050 U	0.096 I	0.050 U	0.058 I	4.9	12.1
	F87208-10	10/25/2011	0.20 U	64.2	0.20 U	2.0 U	0.25 U	1.1	0.61 I	2110	1.4 I	708	0.32 U	0.43 U	130	6.8	15	NA	2.5 U	33.4	0.058 I	0.050 U	0.050 U	0.028 I	23.3	17.5
	F91967-3	04/05/2012	0.20 U	67.3	0.20 U	2.0 U	0.25 U	1.6	22.6	1770	2.0 I	2800	0.015	1.2	110	2.7	9.9	NA	2.9 I	27.5	0.051 I	0.079 I	0.050 U	0.090 I	13	20.1
	F97878-9	10/10/2012	0.21 U	128	0.20 U	2.0 U	0.32 U	0.38 I	79.6	1980	18.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OLD-OU2-DP02B	F97878-11	10/10/2012	0.21 U	2	0.20 U	2.0 U	0.32 U	0.58 I	0.44 U	527	7.9 I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
ug/L - micrograms per liter
U - indicates result less than method detection limit
I - indicates result greater than or equal to method detection limit but less than practical quantitation limit
NA - not analyzed
GCTL- groundwater cleanup target level
NADSC - natural attenuation default concentration



LEGEND

Staff Gauge	Fence (Property Line)
Groundwater Sample Location	OLD-OU2-43A — New Well; installed during during PS Activities
(320) TCE Concentration (µg/L), 7/2005 Baseline groundwater sampling event	OLD-OU2-43B — Existing Well
(130)* TCE Concentration (µg/L), see note	A — Shallow Monitoring Well (0-30 ft bls)
(BDL) Below Detection Limit	B — Deep Monitoring Well (>30 ft bls)
GOAA Greater Orlando Area Airport	

Note:
Blue TCE concentrations reflect data up to April 2005. 18B, 39B, 40B, 42B, 43B, 44B, 45B, and PZ26 were sampled in April 2005. The other monitoring wells and DPT locations were sampled between June 2004 and January 2005.

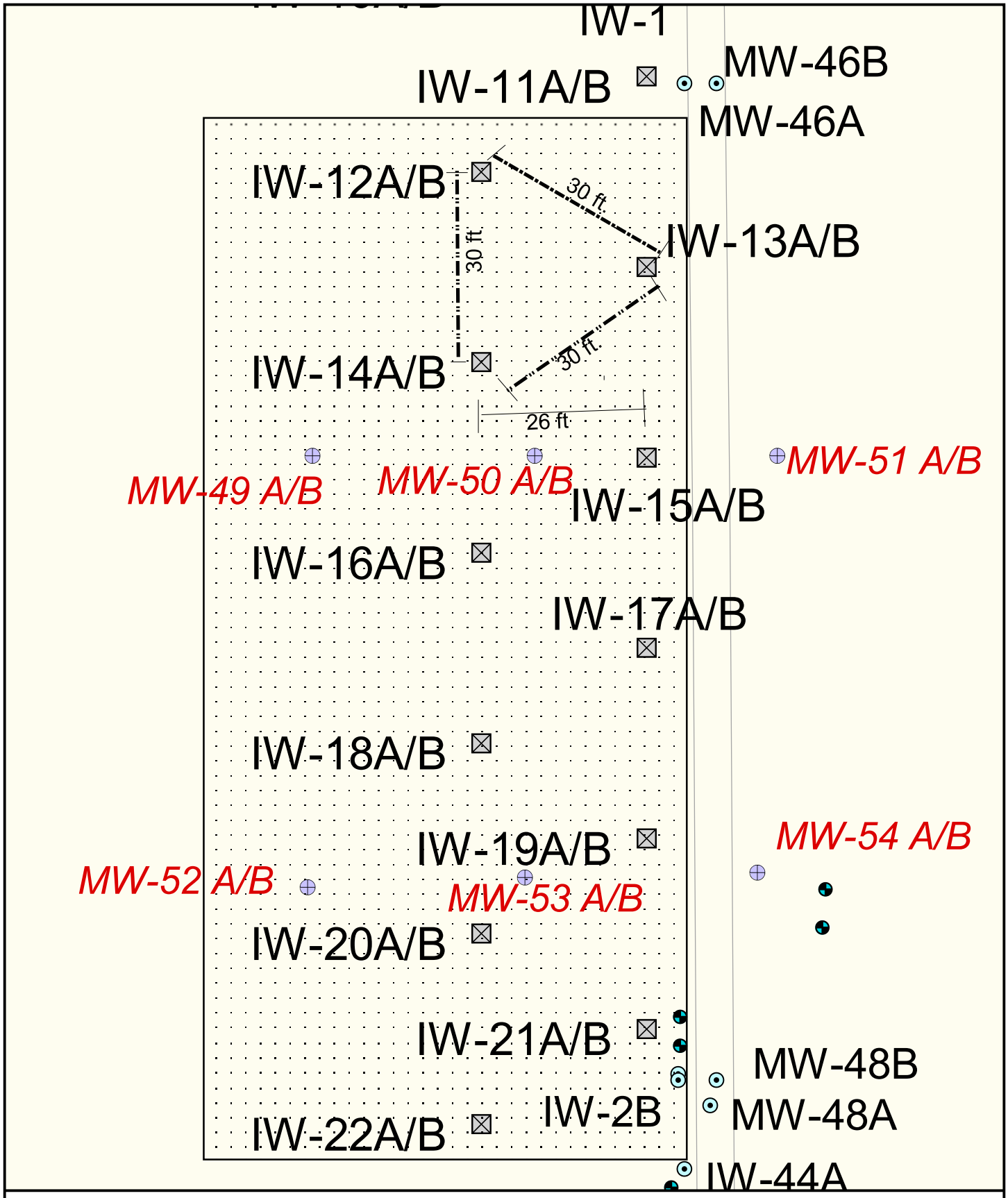
North

0 75' 150' 225'

Scale in Feet

FIGURE 1-2
Pilot Study Injection Locations and Baseline TCE Concentrations
OU2, Orlando Naval Training Center
Orlando, Florida

NOTE: Original figure created in color



Full-scale biobarrier injection well.dbf
Ou2 phase i pilot wells.dbf

N

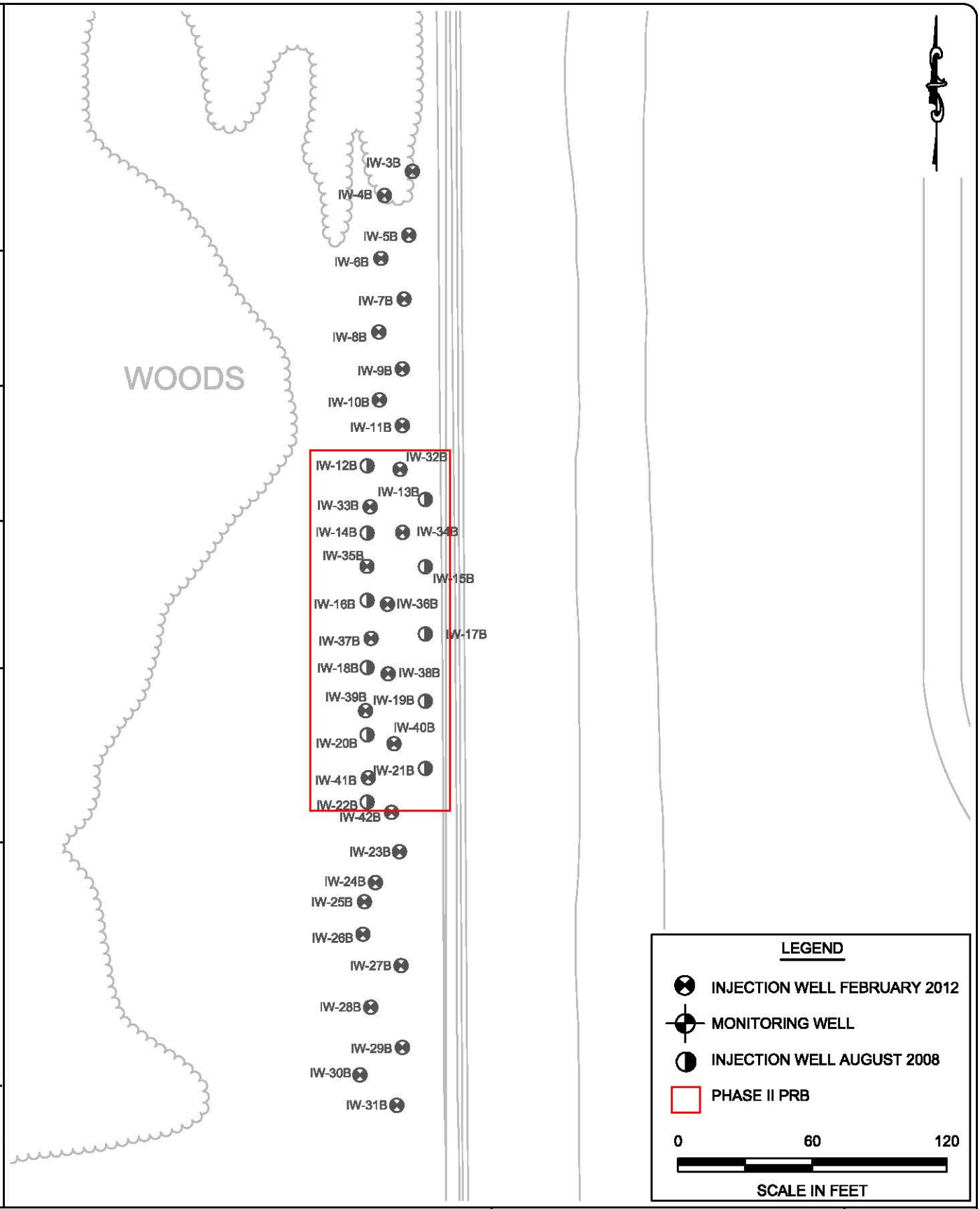
0 20 40 Feet

1 inch = 36 feet

Figure 3
Spacing of Injection Wells
Phase II Pilot Injections
OU2, NTC Orlando

CH2MHILL

File Path: c:\egis_orlando_ntc_r4.apr, Date: 30 Apr 2008 20:01, User: SNAIK1, Facility: NTC Orlando - Figure 4 Spacing of Injection Wells



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PROJECT MANAGER JLK
DATE 11/26/2012
FILE FIGURE 4.pdf

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INJECTION WELL LOCATION MAP
NTC ORLANDO
OPERABLE UNIT 02
ORLANDO, FLORIDA

FIGURE:
4

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